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Products, News & Information Data Centers Can Trust. Since 1979

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# Uptime Takes Center Stage

## Why Uptime Remains A Critical Factor To The Success Of Today's Businesses

*by Christian Perry*

• • •

**YOU MIGHT HAVE** the shiniest IT equipment on the enterprise block, but if your systems aren't available when your employees and customers need them, that shiny equipment is practically worthless. Now more than ever, uptime is a critical goal reflected in the efforts of worldwide data center and other IT managers, who typically list it at or near the top of their priorities.

"Given the current trend to do more with less, this has elevated the importance having an IT infrastructure that is continuously available," says Carl Hillier, director of strategic marketing for infrastructure services at Fujitsu America (us.fujitsu.com). "The ability to rapidly and consistently satisfy the demands placed upon an organization's IT systems by its customers, partners, and employees alike is critical to achieving the requisite level of both efficiency and competitiveness in today's business environment."

### Key Points

- When customers cannot access services, companies will see a direct impact on their bottom line, and even seemingly small rates of customer attrition can have a massive effect on revenue.
- As technology becomes ever more integrated into the lives of customers, IT managers are under the gun to ensure that systems and services remain running at all times.
- Uptime remains a top priority among data center and IT managers and is now more of a far-reaching, architecture-defining strategy than just a basic concept.

### Dollars At Stake

In a world where customers demand nothing less than consistent, instant access to services and information, uptime has become the poster child for business success. Mark

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# Greening Data Center Cabling

## Save Money, Energy & The Planet

*by Bridget Mintz Testa*

• • •

**A DATA CENTER IS** crucial to the enterprise, so running it as efficiently as possible can only benefit the enterprise. Although going "green" sometimes seems to involve spending a great deal of money with few business benefits, greening the cable plant is different.

A green cabling infrastructure can make a data center more efficient. That saves money on power and cooling, which are, of course, directly related. But, if planned properly, green cabling also helps save capital expenditures for the lifetime of the facility. And when cable must at last be replaced, some expenses can be recouped from recycling. Of course, at the same time, using less energy, keeping air temperatures cooler, and keeping toxic materials out of landfills all benefit the environment.

For both power and data cables, going green in the beginning is about physically maximizing airflow and air space, as well as getting the most robust cabling you can with the longest possible life cycle. As for recycling, don't just think copper. It's possible to do a lot more.

### More Air Space, Less Heat

Maximizing airflow depends initially on good data center design. Later, it depends on proper maintenance of the cabling plant. "Historically, data centers were built to accommodate as much power or data cable under the floor as possible," says Duncan Lee, CEO of PDU Cables (www.pducables.com), a supplier of UL-listed power distribution cable assemblies for data centers. "But as servers got bigger, they required more power and more power cable." With only 6 inches of raised flooring in older data centers, there just wasn't enough space for proper airflow.

Today, data centers built with hot/cold aisles should be designed with bigger plenums for better airflow. Hot aisles should sit right over precisely measured power cable paths. "We want the cold aisle free from power cables," Lee says. "Lay the power cables along each hot aisle under the floor in the exact length necessary with no extra cable coiled up." This maximizes airflow.

PDU Cables also recommends placing low-voltage data cables overhead, with high-voltage power cables under the raised floor. Sufficient air space must be planned for both types of cable so they don't heat up, which wastes power and raises air temperature.

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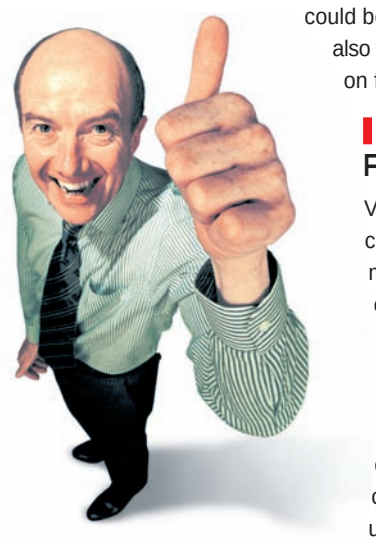
## News

### Developers Pleased With Windows 7



Application developers seem to have taken a shine to Windows 7, according to a survey completed by database and developer tools vendor Embarcadero Technologies. In May, the firm interviewed 606 developers, architects, and analysts about their use of Microsoft's newest operating system. More than half—54%—were developing applications for Win7, and 25% plan to within the year. Only 10% said Redmond's latest OS was not part of their future plans, and 15% said they are waiting for wider Win7 adoption before they dive in. Those who said they were pleased with Win7 cited the operating system's touch, multitouch, and enhanced graphics capabilities as driving Win7's appeal.

### Venture Capital Fundraising Hits 7-Year Low

According to figures from Thomson Reuters and the NVCA (National Venture Capital Association), 38 venture capitalists raised just $1.9 billion in Q2 2010, a low point not seen since Q3 2003. The statistic is especially startling when compared to the first quarter of this year, which saw the same number of venture capitalists raise $3.7 billion—a 49% decrease. In a statement, NVCA President Mark Heesen pointed to ongoing economic uncertainty as the reason for the drop in fundraising. He is, however, optimistic about fundraising growth in 2011, when the market could become crowded again. The report also noted that of the 38, 26 were follow-on funds and 12 were new funds.

### VMware Beats Expectations For Q2

VMware outpaced financial forecasts in Q2 2010, pulling in $674 million in revenue, a 48% increase over the same period in 2009 and more than the $656 million predicted by analysts. Earnings were also up 127% over Q2 2009, with $75 million compared to $33 million. The company's U.S. revenue was up 43% ($334 million); internationally, it saw a 53% jump to $340 million. VMware's license revenues were $324 million, while its services revenue was $350 million, both large percentage increases. VMware enjoyed strong growth for all its products worldwide and also added 850 jobs, bringing its company-wide total to 8,200. The better-than-expected results led the company to raise its full-year outlook.

### Study Shows MySQL Users Accepting Of Oracle

Open-source business intelligence vendor Jaspersoft received 518 responses in a recent survey examining user satisfaction with MySQL following Oracle's acquisition of MySQL creator Sun Microsystems. According to the survey, 28% of respondents do not currently use MySQL, 47% plan to stay with MySQL, and 5% plan to switch to a different platform such as PostgreSQL. Additionally, 19% of those surveyed believe it's too soon to make a decision one way or the other. As for MySQL's quality, 78% of respondents believe MySQL development will either improve or remain the same under Oracle, compared to 22% that believe MySQL will eventually suffer.

### Yahoo! Q2 Profits Increase, But Revenue Falls Short

Yahoo! reported that its profit increased by more than 50% during the second quarter of this year; however, revenue topped out at $1.6 billion, falling short of initial expectations. Accounting for adjustments, net revenue for the company was $1.13 billion, which is below analysts' expectation of $1.16 billion. Additionally, Yahoo!'s search business experienced an 8% decline year over year. On a positive note, total net income for Yahoo!'s Q2 was $213.3 million, up from $141.4 million in Q2 2009.

### AMD Posts Promising Q2 Results

Disregarding charges having to do with its GlobalFoundries spinoff, microprocessor manufacturer AMD had quite the quarter this past three months. The company posted record revenue of $1.65 billion and a gross margin of 45%; with the GlobalFoundries charges factored in, AMD ended the quarter with a net loss of $43 million, which is a big improvement over its $330 million loss a year ago. AMD cites the performance of and high demand for its mobile platforms as contributors to the improved numbers. The company shipped a record number of notebook processor and chipset units in the quarter; in the server market, however, AMD's momentum was somewhat blunted by rival Intel's success.

### Nokia Siemens To Buy Motorola Wireless Unit

Nokia Siemens is broadening its CDMA reach with a $1.2 billion acquisition of Motorola's wireless infrastructure unit. Currently Motorola has a large presence in WiMAX, GSM, and the nascent LTE market, all of which will be transferred to Nokia Siemens. Nokia says that once the deal is completed, it will become the third largest wireless infrastructure vendor in the United States and will remain No. 2 worldwide. The cash deal is expected to be completed by the end of this year.

### EU Approves SAP Acquisition

The European Commission has approved SAP's $5.8 billion acquisition of Sybase. Although some shareholders filed lawsuits in an attempt to block the sale of the mobile and enterprise software provider, SAP's filing with the U.S. Securities and Exchange Commission earlier this month indicated that SAP and Sybase's shareholders had come together for an agreement on principal terms. As a result of the acquisition, SAP will be a tougher competitor for Oracle, which just finished its acquisition of Sun Microsystems.

## WATCH THE STOCKS

This information provides a quick glimpse of current and historical stock prices and trends for 13 major companies in the technology market.

| Company | Symbol | Year Ago | July 8 $ | July 22 $ | % change from previous issue |
|---|---|---|---|---|---|
| AMD | AMD | $3.59 | $7.37 | $7.61 | ▲ 3.26% |
| CA Technologies | CA | $19.12 | $18.56 | $19.10 | ▲ 2.91% |
| Cisco Systems | CSCO | $21.90 | $22.55 | $23.27 | ▲ 3.19% |
| Dell | DELL | $13.47 | $12.78 | $13.40 | ▲ 4.85% |
| Google | GOOG | $437.34 | $456.56 | $484.81 | ▲ 6.19% |
| HP | HPQ | $41.64 | $45.48 | $46.07 | ▲ 1.3% |
| IBM | IBM | $117.06 | $127.97 | $127.47 | ▼ 0.39% |
| Intel | INTC | $19.48 | $20.10 | $21.78 | ▲ 8.36% |
| McAfee | MFE | $44.15 | $31.56 | $31.58 | ▲ 0.06% |
| Microsoft | MSFT | $25.56 | $24.41 | $25.84 | ▲ 5.86% |
| Oracle | ORCL | $22.20 | $23.22 | $24.31 | ▲ 4.69% |
| Red Hat Software | RHT | $23.24 | $30.55 | $32.34 | ▲ 5.86% |
| Symantec | SYMC | $17.46 | $14.50 | $15.19 | ▲ 4.76% |

*NOTE: This information is meant for reference only and should not be used as a basis for buy/sell decisions.*

News

## EMC Reports Record Results

EMC announced impressive results for its second quarter, with revenue increasing 24% year over year to $4.02 billion and earnings more than doubling to reach $426.2 million—a 108% increase, to be exact. EMC attributes its success to strong execution of business strategies and high global demand from customers. Additionally, EMC reported record operating cash flow of $2.1 billion and free cash flow of $1.6 billion—up 44% and 47%, respectively, compared to last year. The quarter for EMC ended with $10.3 billion in cash and investments.

## LTE Mobile Broadband Gaining Ground

In its "Wireless Spectrum, Services, and Technology Deployment Market Data" report, ABI Research indicates that LTE may see widescale rollouts by the end of 2010, including from major providers such as Verizon and Japan's DoCoMo. About 132 networks have reported trials of LTE commercial services worldwide, which is 32 more than at the end of 2009. The report notes that U.S.-based WiMAX service provider Clearwire has improved its WiMAX network and added subscribers with the launch of the HTC EVO 4G, which is WiMAX-capable. An estimated 188 WiMAX networks are now in trial or commercial operation, and ABI Research expects that number to grow in 2011.

## Dell To Acquire Ocarina Networks

Dell announced earlier this month that it has entered an agreement to purchase Ocarina Networks, a San Jose, Calif.,-based company founded in 2007 that Dell says offers "innovative storage optimization technology including compression and deduplication" to help customers reduce their data management costs and streamline their operations. According to Dell, the Ocarina acquisition will bring leading deduplication capabilities to its own storage systems, allowing customers to dramatically reduce storage space requirements and redundant data amounts. Dell plans to finalize the acquisition by the end of July, at which point it will invest in more engineering and sales capability but still operate Ocarina out of San Jose.

## NTT To Purchase Dimension Data

London-based global IT solution provider Dimension Data has agreed to an offer for acquisition in which Tokyo-based telecommunication server provider NTT will purchase the company for $3.2 billion. Executives from both companies agree that the deal will give the combined company a firm position to help corporations as they move to managed infrastructure services and cloud computing by combining NTT's network carrier capabilities and Dimension Data's global system integrator expertise. The companies plan to complete the deal by October.

## Seagate Revenue Increases

Hard drive and storage solution manufacturer Seagate announced substantial revenue growth for its fourth quarter, which ended July 2, and its 2010 fiscal year. In Q4, the company reported revenue of $2.7 billion, up 13% from $2.4 billion in 2009. For the entirety of 2010, Seagate reported revenue of $11.4 billion, up 16% compared to $9.8 billion in 2009. Despite its growth, Seagate President and CEO Steve Luczo says the company is disappointed that its fourth-quarter results didn't turn out better; a lower number of shipments than expected and unfavorable pricing on disk drives kept revenues from climbing even higher, he says.

## Google Search Market Share Falls As Microsoft's Rises

Google remains the undisputed king of the search engine market, but Microsoft is hot on its heels, according to the latest figures from Experian Hitwise. Bing captured 9.85% of U.S. search requests in June, a jump of 0.62%. Google's market share fell about 1% over the same period. Market share for Yahoo! remained steady; however, Microsoft will soon be absorbing Yahoo!'s search engine activities—likely within the next year—as a result of a deal finalized this past February, meaning Yahoo! will no longer be a player in the search engine arena and will cede its position to Microsoft. Bing, which started off modestly, has grown about 88% over the past 12 months, showing that it could indeed become a serious competitor to Google.

## Symantec Study Shows Spam Increase

According to a recent report from Symantec, spam levels were on the rise in June, with certain days showing high concentration of malware-containing spam. Specifically, malware spam made up almost 12% of all spam on June 13 and topped 5% on June 3 and June 15, the report shows; previously, malware-containing spam had never comprised more than 3% of all spam on

any given day in 2010. Most of the spam was in the form of emails about the FIFA World Cup, so the spammers were relying on social engineering tactics to compromise PCs. Some of the World Cup spam featured a dual attack consisting of a PDF attachment and a malicious link, a tactic that increases the chances of success because the malicious link may remain in the message even if the PDF attachment is removed by an anti-malware filter.

## Apple Profits Skyrocket

Sales of the iPhone 4 and the iPad have pushed Apple profits upward, leading the company to report a 78% increase in net income for its third quarter. The company's numbers would have been even higher, analysts say, if it could have kept up with unexpectedly high demand for iPhones and iPads. The results beat Wall Street forecasts, as Apple sold almost 3.3 million iPads during the quarter, helping to generate some $2.1 billion in revenue. Even with the success of the iPad, though, the iPhone remains Apple's biggest revenue producer: iPhone sales generated $5.3 billion in revenue over the quarter.

## Linux Dominating Mobiles

According to ABI Research, Linux use is on the rise in mobile devices. The research firm claims that by 2015, Google's Android mobile platform and Chrome OS, Intel and Nokia's MeeGo platform, and HP's (formerly Palm's) webOS platform will be running on 62% of non-smartphone mobile devices, which includes netbooks, media tablets, and other mobile devices. All of those OS platforms are based on Linux, which reduces development costs for developers but still lets them differentiate their offerings in the marketplace.

## White House Releases Cybersecurity Report

The White House issued a progress report on the Obama Administration's cybersecurity efforts. The report detailed updates to the 12-part Comprehensive National Cybersecurity Initiative. A National Cyber Incident Response Plan is under development and will be tested as part of the Cyber Storm III simulation in September. International cybersecurity is also a concern; the United States is taking part in the U.N. Group of Governmental Experts on cybersecurity. Additional organizational changes were outlined in the report, including a new research and development strategy. The report points to the need for continued cooperation between the private and public sectors, such as working with businesses and other government agencies to assess cyber threats.

## Google Shares Down Despite Revenue Growth

Google recently reported revenues of $6.82 billion, or $6.45 per share, for the second quarter of the year. The increase represents a 24% jump compared to the same period last year and a 1% increase from the first quarter. Investor disappointment was evident following the report, as the company's shares were down about 4% in after-hours trading. During the quarter, Google added about 1,200 new employees, mostly in areas related to search monetization, display advertising, and mobile applications. New employees included members of AdMob, a mobile advertising network purchased by Google for $750 million to help compete in the mobile advertising space.

## Metaweb Acquisition To Improve Google's Search Results

Google announced that it has acquired Metaweb Technologies in an effort to improve its semantic search capabilities. Metaweb operates an open-source database called Freebase that contains information on more than 12 million topics, culled from multiple online sources; adding this information to Google's search capabilities will expand the search giant's ability to answer trickier queries more effectively by offering specific information rather than just a list of sites. Google says the acquisition will improve long queries and help the search engine better recognize relationships between words.

## PC Sales Up

IDC recently reported that the global PC market grew more than 22.4% in Q2 2010, falling just shy of IDC's projections by half a percentage point. According to the research firm, desktop shipments outperformed expectations thanks to companies replacing aging machines, but laptop shipments underperformed due to economically constrained consumers. The top performer, HP, saw 14.2% growth compared to Q2 of last year, and Dell moved ahead of Acer with 19.1% shipment growth year over year. Current economic conditions have led the business sector in the United States to take a "wait-and-see" approach regarding PC refresh.

## Google Makes Up Ground In Smartphone Space

Samsung continues to rank as the top OEM in the United States among mobile device makers, according to data from ComScore. Google, meanwhile, made up significant ground against RIM, Apple, and Microsoft among smartphone platform leaders. ComScore's data is based on key trends in the U.S. mobile phone space for a three-month period ending in May vs. the previous three-month period. Samsung devices snatched a 22.4% share of U.S. mobile subscribers, up from 21.4%. LG (21.5%; - 0.2%), Motorola (21.2%; -1.1%), RIM (8.7%; +0.5%), and Nokia (8.1%; -0.6%) followed. Among market leaders in the smartphone platform space, RIM topped the field with a 41.7% share, down 0.4%. Apple followed with a 24.4% share. Although Apple's share was down 1%, the numbers don't reflect the June release of the iPhone 4. Google, meanwhile, made the biggest leap among the leaders, gaining 4% to grab a 13% stake compared to Microsoft's 13.2% (-1.9%) and Palm's 4.8% (-0.6%).

## Upcoming IT Events

Are you looking to learn more about data center or IT topics? Network with some of your peers? Consider joining a group of data center professionals. If you have an event you'd like listed, please send an email to feedback@processor.com.

**- AUGUST -**

Virtualization Series-Citrix
Aug. 3, 11:30 a.m.
New Horizons Webinar
www.nhcomputerlearning.com/seminars

• • • • •

Sharepoint 2010: Is It Really All That Different
Aug. 5, 8:30 a.m.
New Horizons Cleveland
1 Infinity Corporate Centre Drive, Suite 250
Garfield Heights, Ohio
www.nhgreatlakes.com

• • • • •

AFCOM Dallas/Fort Worth
Aug. 10
Dallas, Texas
www.dfwafcom.org

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AFCOM St. Louis "Gateway" Chapter
Aug. 10
Schneider Electric Technology Center
807 Corporate Centre Drive
O'Fallon, Mo.
www.afcom.com/afcomnew/stlouis.html

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AITP Garden State
Aug. 10
Jim Johnston's Steakhouse
58 Eisenhower Parkway Mountain Plaza
Roseland, N.J.
tech.groups.yahoo.com
/group/aitpgardenstatechapter

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AITP Richmond
Aug. 10
2015 Staples Mill Road
Richmond, Va.
www.aitprich.org

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PASS Wisconsin SQL Server User's Group
Aug. 10, 4:30
Microsoft Office
2176 Woodcrest Drive
Green Bay, Wis.
wisconsin.sqlpass.org

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Greater Wheeling AITP
Aug. 11
Wheeling, W.Va.
www.aitp-wheeling.org

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ISSA San Diego
Aug. 11
San Diego, Calif.
www.sdissa.org

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Southern New England SQL Server User's Group
Aug. 11
www.snessug.com

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AITP Washington D.C.
Aug. 12, 6:30 p.m.
Alfio's Restaurant
4515 Willard Ave.
Chevy Chase, Md.
aitpwashdc.ning.com

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ISSA Northeast Ohio
Aug. 12
Cuyahoga County Library-Parma South
7335 Ridge Road
Parma, Ohio
www.neoissa.org

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SQL Server Society of Las Vegas
Aug. 12
The Learning Center of Las Vegas
777 North Rainbow
Las Vegas, Nev.
sssolv.com

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Thumbsucking:
The Dangers Posed By USB Devices
Aug. 12, 10 a.m.
New Horizons Dayton
1890 Commerce Center Drive
Fairborn, Ohio
www.nhcomputerlearning.com

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Virtualization Series-Hyper-V
Aug. 12, 11:30 a.m.
New Horizons Webinar
www.nhcomputerlearning.com/seminars

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AITP Southwest Missouri
Aug. 17
Springfield, Mo.
aitpspringfield.org

*For more Upcoming IT Events, see page 10.*

# PRODUCT RELEASES

The *Processor* Product Releases section includes brief overviews of data center products.

All products listed have been released recently, so use this section to get up to date with what's new on the market and to find products you need.

Manufacturers:
Do you have a new product that data center/IT managers would be interested in learning about?
Send your press release or product information to press@processor.com.

## PHYSICAL INFRASTRUCTURE

### Adder Free-Flow

Adder released its Free-flow edge detection switching technology, which lets customers use a single mouse and keyboard across two or more PCs. Free-flow technology will ship with the CCS4USB Command and Control switch, and current users can upgrade free of charge.

### Aten KM0932, KM0532, KM0032

Aten released the KM0932 ($6,699.95) and KM0532 ($3,999.95) enterprise Matrix KVM switches. They feature 32 CAT 5-compatible ports with multimedia and out-of-band support. Aten also released the KM0032 Matrix Expansion KVM ($3,999.95), which puts more servers under central control. The KM0532 and KM0932 allow five and nine consoles, respectively, to manage up to 32 connected servers.

### Optima Mobile Cabinet

Optima EPS recently announced the availability of its Mobile cabinet, designed specifically for airborne communications, mobile applications, or seismic zones. The cabinet features double-walled extrusions for modularity and a 12U enclosure stacked on top of a 38U bottom, though other sizes are available. The cabinet also features reinforced corner members, cross-bracing, and stiffeners.

### SynapSense & Future Facilities

SynapSense and Future Facilities announced the integration of SynapSense Data Center Monitoring and the Energy Management Solution into the Future Facilities' Virtual Facility data center modeling environment. The integrated solution will combine real-time monitoring and computational fluid dynamics simulation tools to offer a view of the past, present, and future states of the data center environment.

## NETWORKING & VPN

### BeyondTrust PowerBroker For Desktops Free Edition

BeyondTrust released PowerBroker for Desktops Free Edition, which is part of version 4.8 of the PowerBroker suite. PowerBroker for Desktops Free Edition lets IT personnel set up employees as standard users to secure their Windows desktops while providing advanced administrative privileges of common system tasks. Employees are able to manage common tasks, such as defragmenting the hard drive, without error messages or User Account Control prompts. This will reduce the number of calls employees make to IT personnel while also tightening security. The program is implemented as a Group Policy extension; organizations must specify the privileges necessary for an application.

### Firetide FWC 2050, HotPoint 5100 & HotPoint 5200

Firetide announced 802.11n MIMO indoor and outdoor access points and wireless LAN controller products designed to deliver high performance and reliability for real-time voice, video, and data applications. The products include the FWC 2050 WLAN controller, the HotPoint 5100 indoor dual-radio 802.11n MIMO access point, and the HotPoint 5200 outdoor dual-radio access point.

### FrontRange Solutions License Manager 3.1.1

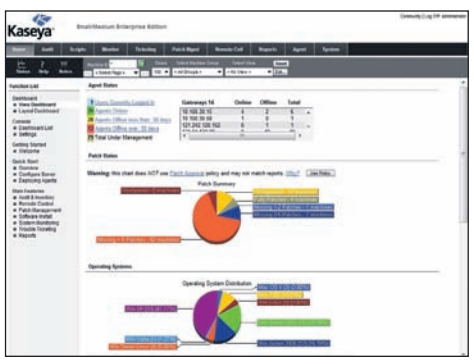
FrontRange Solutions announced License Manager 3.1.1, a tool designed to deliver better visibility and optimized use of available assets while reducing costs. Features include a data collector designed to import software audit information into License Manager from Microsoft System Center Configuration Manager 2007 and the ability to dynamically reconcile recorded software licenses against software on the network.

### Ipswitch WhatsUp Gold WhatsVirtual 2.0

Ipswitch announced WhatsVirtual 2.0, an addition to its suite of WhatsUp Gold IT management software. WhatsVirtual 2.0 features support for VMware vCenter and vMotion, and it features high availability and virtual clusters. The solution starts at $1,495 and requires a minimum of WhatsUp Gold 14.2.

### Kaseya Small/Medium Enterprise Edition

Swiss IT systems management vendor Kaseya has announced the release of Kaseya Small/Medium Enterprise Edition. The product is aimed at small to medium-sized IT departments needing to rapidly




deploy a systems management suite that automates routine IT tasks. SMEE is a locally hosted solution that helps ensure that systems are accessible while remaining secure and allows the automation of many IT department systems. SMEE allows IT managers to deploy software and patches, submit tickets, inventory assets, and facilitate remote computer access. It is compatible with both Windows and Mac OS X and is available in multiple languages.

### ManageEngine SQLDBManager Plus

ManageEngine launched SQLDB-Manager Plus, a Microsoft SQL Server monitoring solution that helps database administrators diagnose and resolve SQL server performance problems. SQLDB-Manager Plus provides a holistic view of production databases to help administrators track usage patterns and facilitate more accurate capacity planning. The solution is available as a downloadable file; pricing starts at $795.

### Micro Focus SilkPerformer CloudBurst

Micro Focus introduced its SilkPerformer CloudBurst service, which is a load testing solution based on Micro Focus Enterprise Cloud Services technology. CloudBurst lets customers test their Internet applications using simulated peak loads, so developers can get real-world results without suffering real-world consequences. The offering supports Micro Focus' Browser Driven Load Testing

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load-generation technology, which reduces the time needed for scripting and script maintenance by 50% or more. And because SilkPerformer CloudBurst leverages cloud-based infrastructure to adaptively scale resource requirements, users can take advantage of consumption-based pricing.

### ScriptLogic Patch Authority Ultimate 7.5

ScriptLogic released the Patch Authority Ultimate 7.5, a solution ideal for IT administrators who automate and update Windows physical and virtual servers. To accommodate virtual machine growth, Patch Authority Ultimate 7.5 includes Machine View (search, sort, and filter), Patch View (patch detailing), and extra interface visibility.

### Smart-AVI DV-SW16 & DVN-16P

Designed to switch high-resolution DVD video output from 16 PCs, the DV-SW16 and DVN-16P from Smart-AVI support 1,920 x 1,200 HDTV resolution for the management of EDID display detection. The DVN-16P also features stereo audio and transparent USB 2.0, which lets staff use any USB device from the console.

### ZyXEL Communications GS2200 Series

ZyXEL Communications introduced the GS2200 series of switches. The GS2200 series comes in 24-port, PoE (Power over Ethernet), and 48-port versions, so SMEs can select the right switch for their needs and applications. The GS2200-24P with support for PoE provides the flexibility to deploy VoIP phones, surveillance cameras, and WAPs (wireless access points) anywhere a CAT 5 data cable can reach.

## STORAGE

### 3PAR Plug-In For VMware VAAI & Support For VMware vSphere 4.1

3PAR announced a new plug-in for VMware VAAI and support for VMware vSphere 4.1 to provide advanced server and storage virtualization. The products provide greater scalability through Hardware Assisted Locking, increased performance and efficiency by eliminating repetitive write commands, and better agility with VM cloning and VMware Storage vMotion.

### Crossroads Systems Library Overview Analysis Service

Crossroads Systems announced the Library Overview Analysis Service, a tool designed to enable faster backups and identify self cost-justifying performance

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improvements. The service is offered through Crossroads' ReadVerify Appliance and complements Crossroads' Site Analysis Survey and Tape Verification Service. The Library Overview Analysis Service uses data from the ReadVerify Appliance to offer an accessible, secure view of the entire tape library environment; monthly reports regarding data trends analysis, drive-tape error correlation, and system performance and efficiency; and a quarterly summary report with detailed analysis and actionable recommendations.

### EMC Documentum Media WorkSpace

EMC released Documentum Media WorkSpace, a digital asset management program that provides rich Internet applications for marketing personnel. The solution includes image, video, and audio presentation management features, collaborative social media features, and a personal dashboard. EMC says the solution gives marketing professionals more control over and visibility of digital media.

### GlobalSCAPE Managed Information Xchange

GlobalSCAPE announced the availability of its cloud-based managed file transfer service, Managed Information Xchange. The service combines GlobalSCAPE's Enhanced File Transfer Server solution with Rackspace Hosting infrastructure, and delivers a hosted MFT solution that enables cost-effective and secure exchange of business data. GlobalSCAPE says the tiered service will let customers outsource all or part of their information exchange needs to increase efficiency, reduce costs, increase security, and track and audit transactions. Xchange benefits include a flexible pay-as-you-go pricing

globalSCAPE® Secure Information Exchange

structure; reduced maintenance costs for hardware, software, personnel, and backups; simple deployment with scalable processing and storage capabilities; and support from the GlobalSCAPE team.

### NetApp Virtual Storage Console

NetApp unveiled the Virtual Storage Console, which is a storage management integration designed to benefit users of VMware vSphere 4.1. The enhancement delivers improved performance and

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# PRODUCT RELEASES

greater scalability for VMware vSphere environments and gives users a simple method for managing storage.

### ■ Nimble Storage CS220, CS240

Nimble Storage announced the CS-Series, which it says is the industry's first iSCSI storage, backup, and disaster recovery solution. The CS220 and CS240 use Nimble's Cache Accelerated Sequential Layout architecture, which enables inline data compression, data optimization that makes use of flash and disk storage, WAN replication, and immediate backup deduplication.

### ■ RAID Xanadu 230

RAID released Xanadu 230, a 6Gb SAS-based midrange solution capable of sustaining up to 4GBps and 40,000 I/Ops. Xanadu 230 scales to a maximum of 192TB and provides various ports for configuration flexibility. Other features include preread parity checking to prevent silent data corruption, remote mirroring, and encryption services to secure data at rest.

### ■ Seagate BlackArmor NAS 400

Seagate released the BlackArmor NAS 400, a four-bay storage server that allows you to install the 3.5-inch drives of your choice. The $399.99 BlackArmor NAS 400 is the same enclosure used in Seagate's NAS 420 and NAS 440. Standard features include Active Directory 2003/2008 support, SafetyDrill+ disaster recovery, remote access, dual Gigabit Ethernet ports, and RAID 5/10/1/0/JBOD

SEAGATE

support. The NAS 400 comes with 10 to 50 backup licenses, encryption capabilities, four USB ports, and support for hot-swapping. Assuming a maximum capacity of 8TB with current drives, the NAS 400 can scale to 32TB with the addition of three more units.

### ■ StorageCraft ShadowProtect Server 4.0 & ShadowProtect Small Business Server

StorageCraft ShadowProtect Server 4.0 and ShadowProtect Small Business Server are now available with recovery options that improve recovery time objectives by shortening the time systems and data are offline because of server failure. Options include full bare-metal recovery and granular recovery of files and folders.

STORAGECRAFT

Recovering to the same system, dissimilar hardware, or to/from virtual environments is also supported via Hardware Independent Restore technology, which also aids in migrating systems to new servers or consolidating to virtual environments. New VirtualBoot technology enables booting any ShadowProtect backup image to a virtual machine via Sun VirtualBox, converting images into a virtual machine, and booting images into VMDK or VHD formats. For more information on this product, see page 29.

### ■ Synology RackStation RS810+ & DiskStation DS411+

Synology released two scalable NAS servers. The RackStation RS810+ and DiskStation DS411+, both four-drive units, can handle 1,000 concurrent requests in half a minute. Both servers deliver an average read speed of 112MBps. The servers also come with Synology DiskStation Manager 2.3 and energy conservation features.

## SECURITY

### ■ Asante Voyager I & Voyager II New Edition

Asante released the Asante Voyager I and Voyager II 1.3MP PT(Z) MPEG4/MJPEG network cameras in the New Edition series. The Voyager I and II are designed for SME/SMB, education, and SOHO customers. Voyager I and II New Edition cameras extend Voyager I and II's feature set with additional enhancements including a wide-angle lens and scheduled

ASANTE

image recording. In addition, it can now be used on most browsers (IE, Firefox, Safari, Chrome, Opera) and is iPhone-compatible. The Voyager New Edition series delivers a 1.3MP CMOS-quality video sensor.

### ■ Barracuda Networks Spam & Virus Firewall Vx & SSL VPN Vx

Barracuda Networks has announced that it intends to expand its virtual product portfolio to include its full line of products. The company is launching the move by rolling out its Barracuda Spam & Virus Firewall Vx and SSL VPN Vx products, thus expanding the company's portfolio to now include appliance, virtual, SaaS, and hybrid delivery models.

### ■ BlueCat Networks Solution Integration With HP UCMDB

BlueCat Networks announced the integration of its solutions into the HP UCMDB (Universal Configuration Management Database). This allows customers to access IPAM, DNS, and DHCP data from one central console. Integration with UCMDB also allows more detailed naming and IP information while providing DN and DHCP mapping.

### ■ HyTrust Appliance & Catbird vSecurity

Catbird and HyTrust announced integration of the HyTrust Appliance with Catbird vSecurity to provide security for virtualized data centers. The integration targets organizations in the public sector and regulated commercial industries to provide centralized control, network monitoring, granular object-based policy management, hypervisor security configuration, zones of trust and firewalling, IPS/IDS, and log aggregation.

### ■ IBM Security Network Intrusion Prevention System

IBM has launched a security appliance called the Security Network Intrusion Prevention System aimed at helping clients more easily adopt and secure IT infrastructure and actively address network threats. The system consolidates intrusion prevention with data and Web application security into one optimized appliance that offers faster, more accurate protection, IBM says. IBM security software is preloaded and preconfigured.

### ■ StoneSoft StoneGate Firewall/VPN 5.2, IPS 5.2 & StoneGate Management Center 5.2

StoneSoft released the StoneGate Firewall/VPN 5.2, IPS 5.2, and StoneGate Management Center 5.2. The latest StoneGate compilation of security solutions automates daily IT management tasks and enables network administrators to more efficiently protect against internal threats and irregular traffic. Providing enhancements for fingerprinting, lessening workloads, improving inspection configuration, and reducing networking downtime, StoneGate 5.2 is architecture for 24/7 availability. To defend against DoS/DDoS attacks, administrators can use StoneGate 5.2 to cap the number of source IP addresses and concurrent connections. Additionally, the NAT (Network Address Translation) rule and counters assist IT in log entries for rulebase configurations.

### ■ Trend Micro Deep Security & OfficeScan

Trend Micro's Deep Security and OfficeScan with Intrusion Defense Firewall both feature the firm's virtual patching technology, which assists users who need to secure out-of-support systems running Windows 2000 Professional, Windows 2000 Server, and Windows XP Service Pack 2.

### ■ Websense DLP For Download

Websense released DLP for Download, a data security suite that can be installed and deployed in minutes. It's ideal for companies that previously have not had the resources for an implementation or faced insurmountable costs and complexity from legacy, first-generation DLP options. Websense TRITON architecture enables Websense to embed enterprise-class DLP directly within its market-leading Web Security Gateway solutions.

## MESSAGING & TELEPHONY

### ■ Alcatel-Lucent Multimodal Communication Companion

Alcatel-Lucent announced the free Multimodal Communication Companion laptop and iPhone application for SMEs that are current users of the Alcatel-Lucent Office Communication Solution. The app allows Web 2.0 communication and other desk phone capabilities to be used on an iPhone. Alcatel-Lucent will release the app for other smart devices in the future.

### ■ C2C ArchiveOne Enterprise & Express

C2C announced that its ArchiveOne Enterprise and ArchiveOne Express solutions are now compatible with Microsoft Exchange Server 2010. ArchiveOne works with Exchange Server to aid in migration, reduce storage demands, and assist in discovery and recovery of PSTs. ArchiveOne can also help with mailbox quota management and retention period controls.

### ■ CounterPath Bria 3.1

VoIP software maker CounterPath updated its Bria softphone, which makes voice and HD (1,280 x 720p) video calls. The latest version includes seamless integration with equipment from Alcatel-Lucent, Avaya, BroadSoft, Cisco, NEC, and Nokia Siemens Networks. Support for multiple accounts is included with this release, which will let users select which account to use for voice, IM, and HD calls over wired or wireless networks. Additionally, CounterPath added user

COUNTERPATH

interface enhancements, multitasking options for multiple audio or video calls, and support for server-based conference calling via Bria's native contact list and call manager.

### ■ CounterPath Bria For Genesys

CounterPath announced Bria for Genesys, a multimedia softphone designed to integrate with Genesys contact center desktop applications. The integration provides fast, cost-effective implementation; an intuitive interface; support for third-party applications; and a wide variety of configuration options to meet the needs of unique contact centers.

### ■ FullArmor MailPortal Migrator

Boston-based FullArmor, which specializes in tools for enterprise policy management, has announced the availability of MailPortal Migrator. The product is aimed at simplifying the migration of Microsoft Exchange and Google Apps mail to Microsoft's Live@edu communications and collaboration service. Microsoft has licensed the product and will make it available to Live@edu customers at no charge.

### ■ Zultys & Quarta Mobile iConnected 1.06

Zultys and Quarta Mobile announced Release Version 1.06 for the iConnected mobile Unified Communications client for the iPhone. The app is compatible with Apple iOS 4 and extends Zultys Unified Communications mobility to the iPhone 4. The update features an enhanced user interface, real-time call alerts, automatic presence status change depending on application status, and iOS 4 multitasking support.

## SERVERS

### ■ iXsystems iX-TB4X2 Triton TwinBlade

iXsystems announced its iX-TB4X2 Triton TwinBlade blade server for Linux and FreeBSD environments. It features four N+1 redundant, high-efficiency

2500W power supplies and can hold 10 TwinBlade servers, each with two nodes. Each node has an Intel Xeon Processor 5600/5500 Series, up to 128GB DDR3

*Go to Page 6*

# PRODUCT RELEASES

*Continued from Page 5*

1333/1066/800MHz ECC Registered DIMM/32GB unbuffered DIMM, Intel 82576 Dual-Port Gigabit Ethernet, and two 2.5-inch hot-plug SATA drive trays. Integrated Matrox G200eW graphics, integrated IPMI 2.0 with remote KVM and virtual media, and optional support for Mellanox ConnectX GDR InfiniBand 40Gbps or 10GbE are also included.

### ■ NIXSYS Legacy O/S & ISA Slot Workstations & Servers

NIXSYS, a provider of custom-built rackmount servers, is offering companies seeking to update their computers while still using their legacy equipment two options to do so with its ISA Slot ($560 and up) and Legacy O/S ($300 and up)

NIXSYS Legacy ISA

NIXSYS Legacy O/S

lines. The Legacy O/S models are available in micro, midtower, and 2U/3U/4U rackmount options. The ISA Slot models come in tower and 3U/4U options, provide three or more full-sized ISA slots, and offer Intel Celeron or P4 processors. Both lines support Windows XP Professional, Win2000, Win98, Windows NT 4.0, MS-DOS, and other OSes. Additionally, NIXSYS can build to other formats upon request. For more on this product, see page 37.

## Clients

### ■ Fiberlink MaaS360 Windows 7 Readiness Service

Fiberlink announced its cloud-based MaaS360 Windows 7 Readiness Service, designed to inform IT about which PCs can run the Microsoft Windows 7 operating system and which ones need to be upgraded for the change. The service aims to help IT managers prepare schedules and budget for hardware upgrades by automatically collecting information from each computer, regardless of location, and comparing it to Microsoft's system requirements. Windows 7 Readiness Service analyzes attributes such as processor speed, physical memory, and hard drive space. As a result of the analysis, the service provides charts, graphs, and detailed information about each computer's ability to be upgraded.

### ■ Guidon Performance Solutions GuidonVue

Guidon Performance Solutions released GuidonVue, its enterprise project portfolio management software. Features include methodology-based project roadmaps; virtual coaching with embedded tools, references, and templates; end-to-end project visibility; and expandable SaaS. The software can be configured to support several project types, and it features seamless integration with other project management systems.

### ■ Kyocera Mita America FS-3140MFP & FS-3040MFP

Kyocera Mita America released two multifunction printers. The monochrome FS-3140MFP and FS-3040MFP offer print speeds of 42ppm and meet Energy Star guidelines. Both devices can print, color scan, and copy, and the FS-3140MFP includes faxing capabilities. The FS-3140MFP costs $2,979, and the FS-3040MFP costs $2,649.

### ■ Oracle Sun Ray Software 5

Oracle has released its desktop virtualization Sun Ray Software 5 for Sun Ray Clients and traditional PC users. Beyond support for Oracle Enterprise Linux, features include an improved virtual desktop client and the inclusion of a Sun Ray connector for VMware View 4 for better efficiency, expanded support of heterogeneous environments, better ease-of-use, and lower TCO.

### ■ SAP, LSI SAP ERP & SAP Best Practices

SAP and LSI have jointly released SAP ERP and SAP Best Practices, which are programs designed to utilize enterprise resource planning for small to midsized hospitals. By using these programs, hospitals will be able to decrease the amount of time and costs associated with IT implementations, SAP says.

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**that data center/IT managers would be interested in learning about?**

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### ■ SoftLayer Technologies Mobile Client For Android

SoftLayer Technologies announced the Mobile Client for Android application that takes many features of SoftLayer's Customer Portal product and brings them to Android devices. This server and resource management app provides tickets for tech support questions or requests as well as server information and bandwidth usage.

### ■ Sybase SQL Anywhere 12

Sybase released the latest iteration of SQL Anywhere. SQL Anywhere 12 is designed for mission-critical database applications running outside traditional data center environments, and requires little or no onsite IT support. The latest version provides several enhancements, including support for storage and synchronization of iPhones and large-scale synchronization environments.

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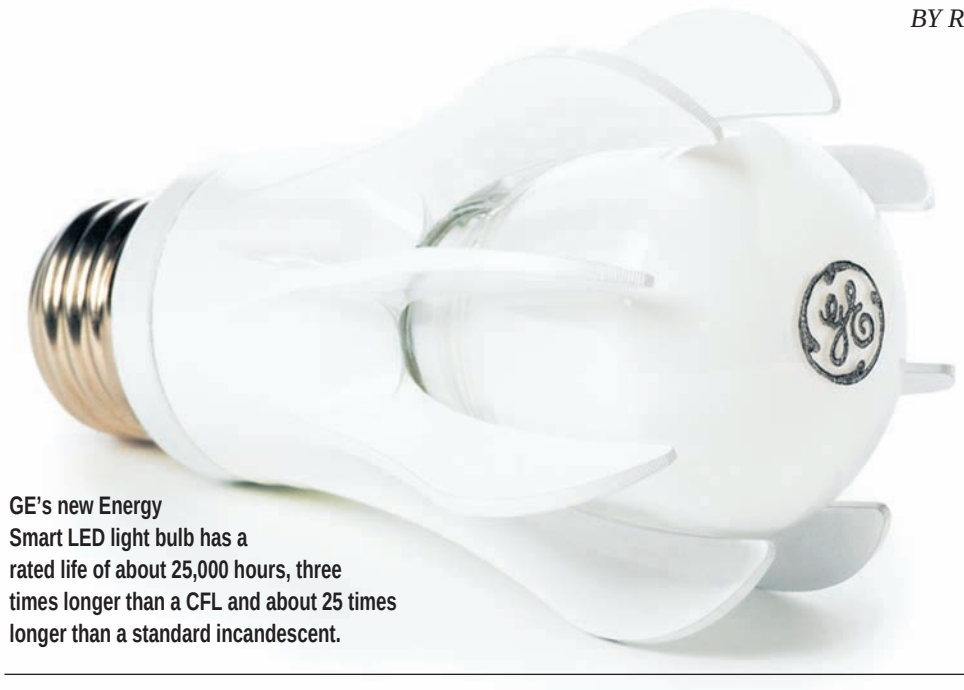
GREEN TECH & TIPS

# **Lighting:** Save Energy & Money In The Data Center

*BY ROD SCHER*



GE's new Energy Smart LED light bulb has a rated life of about 25,000 hours, three times longer than a CFL and about 25 times longer than a standard incandescent.

**HISTORICALLY,** IT resources are poorly utilized. A recent McKinsey & Co. report titled "Revolutionizing Data Center Energy Efficiency" points to "significant inefficiencies" and notes that typical server utilization rarely exceeds 6% and that overall facility utilization can be as low as 50%.

Because data center costs account for about 25% of the typical IT budget, any inefficiently utilized segment of the data center can therefore have a significant impact on that budget.

That includes lighting. It sounds trivial, but just lighting your data center can cost as much as 3% of your overall energy budget, according to Peter Sacco, president of PTS Data Center Solutions (www.ptsdcs.com). And if you're lighting inefficiently, the numbers could be even higher.

For example, if you're using incandescent bulbs, you're spending even more than the norm, because incandescent bulbs need more frequent replacement; that means dispatching (and paying) staff or service personnel to make those replacements. Incandescents also generate heat, which must then be dealt with by your HVAC system, costing you still more money.

## The Solution: Think Green

What to do? Think green. Either (or both) of two approaches can save you and the planet a meaningful amount of energy.

**Lighting alternatives.** First, consider some green lighting alternatives. Instead of incandescent lighting, use more eco-friendly options. Fluorescent bulbs are cool and fairly cost-effective, so that's one possibility. Sacco recommends using fluorescents with diffusers to disperse the light appropriately and efficiently.

Recently, LED lighting has become more efficient and less costly, so this new lighting technology is making inroads in commercial applications of all sorts, including data centers. GE's new Energy Smart LED light bulb is one example of efficient lighting technology. For example, the company's 9W LED bulb generates as much light as a 40W incandescent but lasts about 25 times longer. (See www.gelighting.com/apples-to-oranges for more info about comparing various types of LED lighting systems.) In fact, LED lighting is becoming so appealing that entire municipalities have begun switching; Ann Arbor, Mich., stands to save some $100,000 per year by switching, which means that the city's LED investment will pay for itself in less than four years. And the U.S. Department of Energy estimates that if LEDs were widely adopted, the amount of energy spent on lighting could probably be halved—a significant savings, when one considers that about 22% of the country's total energy bill goes toward lighting.

**Dark data centers.** Want to save big? Go dark. The "dark data center" movement is rapidly gaining adherents. How often are people actually in your data center? Maybe 20% of the time? If it's always illuminated, you're throwing away money and wasting natural resources. Data centers, say analysts, should at least be dimmed. Sacco recommends occupancy sensor-controlled lighting—that way your data center only consumes energy on lighting when people are working inside of it. (Another plus for the new LEDs: They're instant-on, needing no warm-up time.)

The most energy-efficient data centers, of course, are totally dark. The servers, routers, and other equipment in the center are controlled remotely, and people rarely enter, except to make repairs or conduct maintenance. That means they're almost always dark, and every minute they spend dark saves your company's money and the planet's resources. P

# Uptime Takes Center Stage

*Continued from Page 1*

Gilmore, president of Wired Integrations (www.wiredint.com), explains that downtime equals loss of money, which in turn is the No. 1 driving factor for most companies.

"Being down affects companies' ability to service their customers, and with many businesses going online to process more transactions, downtime is a direct blow to their bottom line," Gilmore says. "Some companies, such as those in financial services, can afford zero downtime and are constantly planning and testing to ensure just that."

When uptime levels aren't up to snuff, companies also lose the ability to service their customers, Gilmore says, particularly because most larger call centers leverage their computer systems to provide customer support. When downtime leads to customer service issues, it can contribute heavily to customer churn—that is, the loss of customers.

"All things being equal, a business with a customer churn rate of 3% vs. a customer churn rate of 5% will extract 66% more revenue during the lifetime of a customer," says Ashish Soni, co-founder, president, and CTO of Ringio (www.ringio.com). "Every percentage point of customer churn that can be reduced is a game changer for the business. A few percentage points difference in customer churn is the difference between a barely surviving and a strongly thriving business. Since downtime has been identified as one of the leading causes of customer churn, it is therefore getting top billing."

Many of today's customers are increasingly technology-savvy and ultimately select services that rely on various technologies not only for more options but also to save time. Jason Pollner, co-CEO of IT Authorities (www.itauthorities.com), notes that the recent economic downturn has placed a premium on the savings of both time and money, which in turn has moved technology from trendy to imperative for business.

"People have become more reliant on technology than ever before. Email is done on phones all throughout the day from anywhere in the world—not being in your physical office is no longer an excuse to not reply to email," Pollner says. "With such expectations and reliance on technology, it is imperative that the technology be reliable. Web applications that go down upset customers and frequently drive them to a competitor because of a single outage."

Just as customers are rightly concerned with their ability to access systems and information, upper management also has a big stake in uptime. Soni says that the continued media coverage of downtime events has caused the uptime conversation to enter the boardroom and the psyche of business leaders. Beyond the mainstream media, news of downtime events can also travel like lightning across social networks and blogs, creating further vulnerability to a business' reputation.

## Uptime As A Strategy

For most IT managers, uptime has long been a goal that drives planning around equipment acquisition and configuration, but now the concept is becoming an integral part of overall IT strategies. According to Gilmore, uptime cannot be an after-the-fact thought when planning data center architecture; instead, it must be a priority because it will dictate what technologies should be used to drive the uptime. If you allow uptime priority to drop even a small amount during planning, you'll be playing catch-up and spending plenty of money to replace technologies that don't support the uptime directive, he says.

"IT managers in the past have typically been focused on scalability, basic security, and disaster recovery, in [that] order," Soni says. "Uptime and high availability have usually been pushed to a much later stage. In fact, in the past, disaster recovery has sometimes been incorrectly thought of as a way to provide high availability. Currently, uptime and high availability are getting equal footing to the other traditionally major areas of focus at a much earlier stage than they were before."

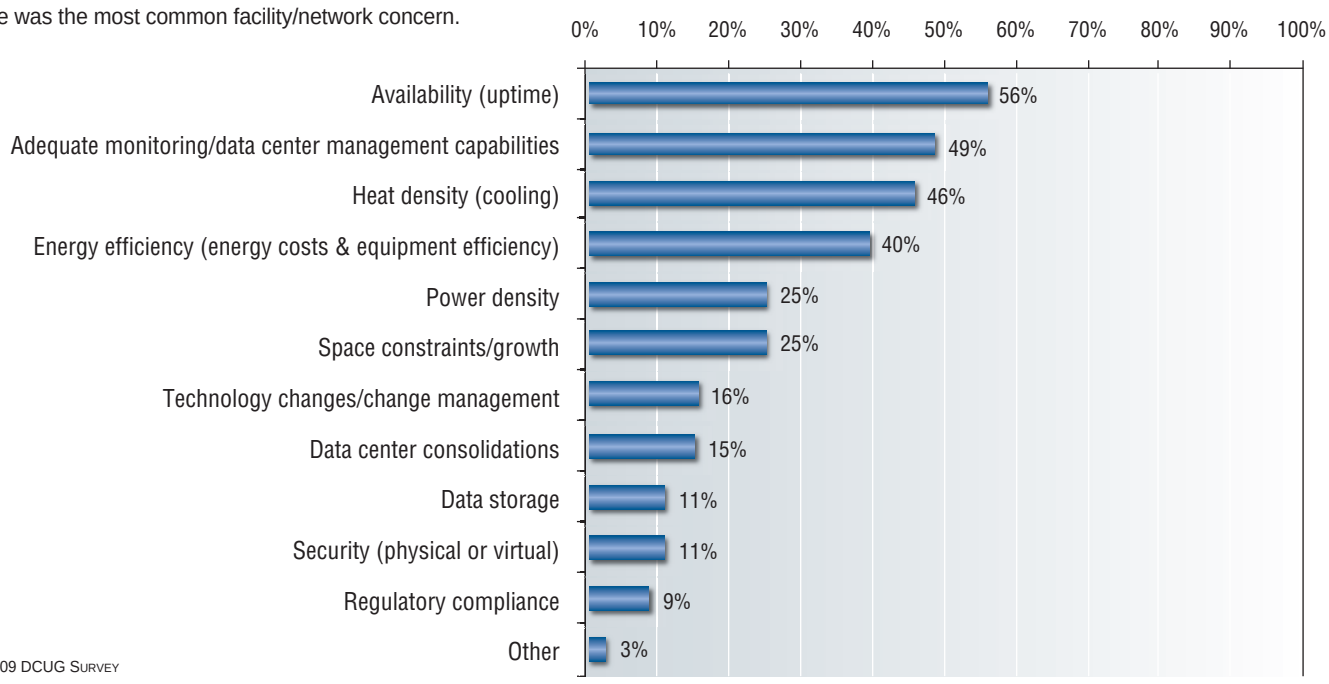
Soni identifies three technical reasons for this higher priority on uptime: the emergence of successful architectural patterns (such as stateless, concurrency controls, and publish subscribe) for high availability and uptime, open-source (and therefore free) high-availability components, and the proven ease of use and implementation of high availability strategies. Of course, as an overall impetus, the business impact of downtime remains at the top and has been made visible to entire organizations, he says.

As uptime enjoys more popularity as a strategy, other popular strategies themselves are pushing the need for more uptime. Mike Mitsch, general manager for NEC's IT Platform Group (www.nec.com), says that new uptime requirements are stemming from the widespread adoption of consolidation and virtualization technologies.

"While virtualization is associated with environmental and licensing savings, it also poses new challenges to IT management in terms of availability," Mitsch says. "High availability becomes more complicated and difficult to quantify in a virtualized environment, where one server platform has on average eight to 12 virtual machines—and growing. In addition, as more mission-critical applications are moved into virtualized environments, traditional HA options only become more complicated and challenging." P

## Top Facility & Network Concerns

Where to focus data center resources is always a controversial topic, but most managers agree that uptime is a top priority. In the Fall 2009 Data Center Users' Group Survey (www.datacenterug.org), uptime was the most common facility/network concern.




SOURCE: FALL 2009 DCUG SURVEY

# Greening Data Center Cabling

*Continued from Page 1*

The best planning can be defeated by poor maintenance. "In renovations, abandoned cable is the issue," says Brian Duval, global marketing communications manager for Siemon (www.siemon.com). "Often, people run new cable over old. The abandoned cable constricts airflow. For renovation, get the old cable out."

## Green Purchases

During the data center design phase, don't limit plans to what's needed right now. "Think about the technology and the physical plant as the company grows in five, 10, or 15 years," Duval says. "Put in the longest-lived data cable you can. People need to understand how fast cabling applications progress. If you want cabling for 10 to 15 years, you should look at 10Gb core cabling." That's for both copper (CAT 6A or even 7 or 7A) and optical fiber (50-micrometer optical multimode 3 or 4 fiber).

It's the same for power cables. Not only does more robust power cabling support new IT equipment demands, but it yields direct energy and money savings. Eric Bulington, chief engineer of wire and cable for Anixter (www.anixter.com), says, "One of the simplest and low-tech ways to reduce the amount of power consumed, increase sustainability, and reduce the cost in a data center is simply by increasing the size of your power conductors."

### Key Points

- The key to green cabling in the data center is planning enough space for proper airflow for both data and power cables, eliminating excess airflow, and laying cable properly.
- In purchasing the cable plant, think long term and get the longest-lived cable possible. Not only will this save the cost of frequent complete cable plant changeouts, but it also reduces energy use and thereby minimizes heat in the air.
- Recycling cable goes beyond copper and includes finding proper homes for old cable jackets.

Bulington says that switching from four-gauge to two-gauge power cables in a 240-volt 100-foot run to a high-density server cabinet can reduce power consumption by $51 per run per year. That "may not sound like much, but if you have 100 cabinets, that's over $5,000 per year in energy savings," he says.

Switching to the more robust cable gauge also reduces waste heat. "Look at four server cabinets running at a continuous full 100% load," Bulington says. "By increasing from four-gauge to two-gauge, you can save 1,500 watts per hour . . . the same amount of energy that a 5,000 BTU space heater would put into the environment. That's heat you don't have to remove from your facility with your cooling system."

## Recycle The Cable Plant

Buying long-lived cable, whether data or power, also means there's less to throw away. "Regardless of whether you dispose of it properly, disposing of it isn't green," Duval says. "It's better to get cable with a long life cycle."

When it is time to replace the cable plant, though, go beyond recycling copper, which is easy. "The last frontier is making sure the jacketing material is properly disposed of," Duval says. "The jacket has a lot of value for those who can use it."

Plastic manufacturers typically have the most use for ground jacket materials. They can also use all the individual components, such as patches and connectors. So don't just dump these items in a landfill. "Find cable reclamation services," Duval says. "Either have the contractor find one or ask the scrapyard that buys the copper what they'll do with all the plastic." If it sends the plastic to a landfill, Duval recommends finding another recycling organization. "The concept of 'trash' is dying," he says. "Almost any waste can be monetized." P

## Document Cabling For Efficiency

"Don't let your cabling grow organically," says Brian Duval, global marketing communications manager for Siemon (www.siemon.com). "That's when things get out of hand with airflow and having more cabling than you need. If you don't know what you have, you use power assets inefficiently. The more efficiently you can use your assets and your capacity without redundancy and waste, the more green you are and the more effective you are from the business point of view."

To use assets as efficiently as possible, document everything from the beginning and keep it up-to-date. With good documentation, you can find what you need at all times. You won't need to install extra cable or abandon untraceable cable, both of which constrict airflow. Don't have time for documentation? Intelligent infrastructure management systems do it automatically.

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## Upcoming IT Events

For more Upcoming IT Events, see page 3.

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Aug. 17
St. Louis, Mo.
stl.issa.org

Oklahoma City AITP Chapter
Aug. 17
Oklahoma City, Okla.
www.aitp.org/organization/chapters/chapterhome.jsp?chapter=40

AFCOM Central Ohio
Aug. 18
Columbus, Ohio
www.afcomcentralohio.org

AITP Omaha
Aug. 19
Omaha, Neb.
www.aitpomaha.com

ISSA Upstate South Carolina
Aug. 20
1001 Keys Drive #100
Greensville, S.C.
www.upstate-issa.org

AITP Tarheel
Aug. 23
4290 Mashie Drive
Pfafftown, N.C.
www.aitp.org/organization/chapters/chapterhome.jsp?chapter=295

ISSA Des Moines
Aug. 23
3920 SW Camden Circle
Ankeny, Iowa
www.issa-desmoines.org

ISSA Baltimore
Aug. 25, 4:30 p.m.
Sparta Inc.
7110 Samuel Morse Drive, Suite 200
Columbia, Md.
www.issa-balt.org

ISSA Inland Empire
Aug. 31, 11:30 a.m.
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Upland, Calif.
ie.issa.org

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Harrisburg, Pa.
centralpenn.issa.org

ISSA San Diego
Sept. 8
San Diego, Calif.
www.sdissa.org

Southern New England SQL Server User's Group
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www.snessug.com

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ISSA Northeast Ohio
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Cuyahoga County Library-Parma South
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Parma, Ohio
www.neoissa.org

SQL Server Society of Las Vegas
Sept. 9
The Learning Center of Las Vegas
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Las Vegas, Nev.
sssolv.com

SpecTECHular 2010
Sept. 9, 9 a.m.
New Horizons Kansas City
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Overland Park, Kan.
www.nhcomputerlearning.com/Spectechular



# Identify Weak Points In Your Enterprise's Uptime

## Discovering Vulnerabilities Is Crucial To Maintaining High Availability

*by Elizabeth Millard*

• • •

**Everyone knows** that security breaches can be devastating to a company's bottom line, but not everyone acknowledges the potentially disastrous effects of downtime to a company's profitability. Service outages can lead to unhappy customers, which can lead to lost revenue and damaged reputations, so maintaining uptime is vital.

"Companies rely on their data center to provide uninterrupted services to power the core of their business," says Dr. Joe Polastre, CTO and co-founder of Sentilla (www.sentilla.com). "In turn, data center uptime depends on proper management of the facilities and IT equipment."

Effective management techniques such as those outlined below can help you detect threats to your uptime so that you can resolve them before they cause troublesome outages.

### Look At Energy

Polastre adds that data center managers are already familiar with many weaknesses and risks surrounding their operations, from fire code regulations to staff management to proper bandwidth and speed provisioning for the data center's applications.

However, Polastre notes, rigorous tracking of weaknesses in energy and cooling have lagged behind management tools for IT systems. He points out that too often, IT departments have bought new servers only to be told by the facilities manager that not enough power is available to deploy these machines.

Ultimately, the way to find weaknesses is to measure, monitor, and manage infrastructure. "You couldn't guarantee that your applications and services will stay up if you don't monitor systems," Polastre says. "Similarly, how can you expect energy to be available and reliable if you're not actively measuring and monitoring it? There's a wide variety of system and performance measurement tools for servers, storage, networking, and applications. These tools point out weaknesses and bring your attention to key issues facing the data center."

### Areas Of Potential Weakness For Uptime

A number of different factors can cause trouble for enterprises' uptime. Here's a list of a few pain points that deserve your attention.

- Air handling
- Applications
- Circuit capacity
- Cooling/CRAC/Chillers
- Fire detection and suppression
- Lighting
- Power
- Server utilization
- UPS load

### Get More Out Of Tools

In order to identify weaknesses, many enterprises use monitoring software that can determine potential problem areas, but sometimes, not all of an application's functions are used to really root out areas of vulnerability. IT managers might use the tools in a reactive way, for example, waiting for the software to send out alerts about potential issues. But by using the tools in a more proactive way—checking on systems that seem to be fine—it's possible to find weak points that may not have become problematic enough for an alert yet.

Tools fall into three categories: measurement, such as meters and agents; management, such as system and storage management; and automation, such as runbook or service automation. Polastre notes that measurement tools, which may be hardware or software, collect the key data points to benchmark the data center. Management tools make sense of that data, providing business intelligence to focus on the key areas of attention. Automation tools streamline the process so that IT managers don't have to manually make every change.

Management suites include such features as workload throttling, resource allocation, process automation, and virtual systems management. Some tools can automatically discover networked assets or keep track of data center inventory.

On the other side, Polastre adds, facility departments use BMS (building management system) software to monitor a facility's mechanical and electrical distribution plant. BMS software manages CRAC units, air handlers, lights, fire systems, and other building areas and mainly deals with energy and cooling supply.

"Most often, IT managers do not have BMS information available to them and vice versa," Polastre says. "Energy management tools bridge this IT-facility gap, thereby highlighting weaknesses across the data center. These energy management solutions give data center executives the ultimate tool to plan for expansions and projects by tracking capacity at all times."

In addition to seeing energy usage more clearly, swapping information with facility managers can be useful for spotting other physical system weak points, such as inadequate air conditioning maintenance, water line issues, questionable electrical wiring, and less-than-ideal fire suppression systems.

### Policy As Prevention

With threats developing at any time and problems that can affect every system in a heartbeat, data center managers need to supplement monitoring and management tools with operational policies.

Continuous management of IT and facilities is accomplished by IT tools and BMS software, Polastre notes, but "hand" monitoring of circuit capacity, server utilization, UPS load, and CRAC power anomalies requires too much human involvement. With limited staff, these tasks would take too much time to yield any useful results.

That means automation and policies need to play their parts in management and discovering weak points in a data center. For example, turning off unused equipment can save energy and money while redistributing power to assets that perform useful work, Polastre notes.

### Key Points

- Enterprises need to use monitoring and management tools in a proactive way to identify weaknesses rather than just respond as issues come up.
- Make sure that someone is checking building management systems and communicate with facilities managers to share information that could give insight on potential areas of weakness.
- Determine likely security threat areas and bring in a security consultant to do an audit occasionally to catch areas that IT may have missed.

### Security Check

Policies should always be checked for potential enforcement across the board, whether that means facility policies or employee usage policies.

According to Hugh Thompson, program committee chairman for the RSA Conference (www.rsaconference.com), tools and technologies are important for staying secure, but employees need to be exposed to information about risks and good security practices. When users don't comply with IT directives, it could lead to downtime, so finding ways to implement policies and enforce them is an important step in strengthening the center overall.

Also, periodic penetration testing as well as automated compliance auditing should be conducted, notes Ozzie Diaz, CEO of AirPatrol (www.airpatrolcorp.com). "The time periods should be based on the business' risk metrics and assessment," he says. "However, monitoring for highly dynamic threats like viruses should be conducted constantly due to the speed of spreading."

As part of a regular checkup, and to find weak points, IT managers may consider bringing in security consultants to do audits, as well. P

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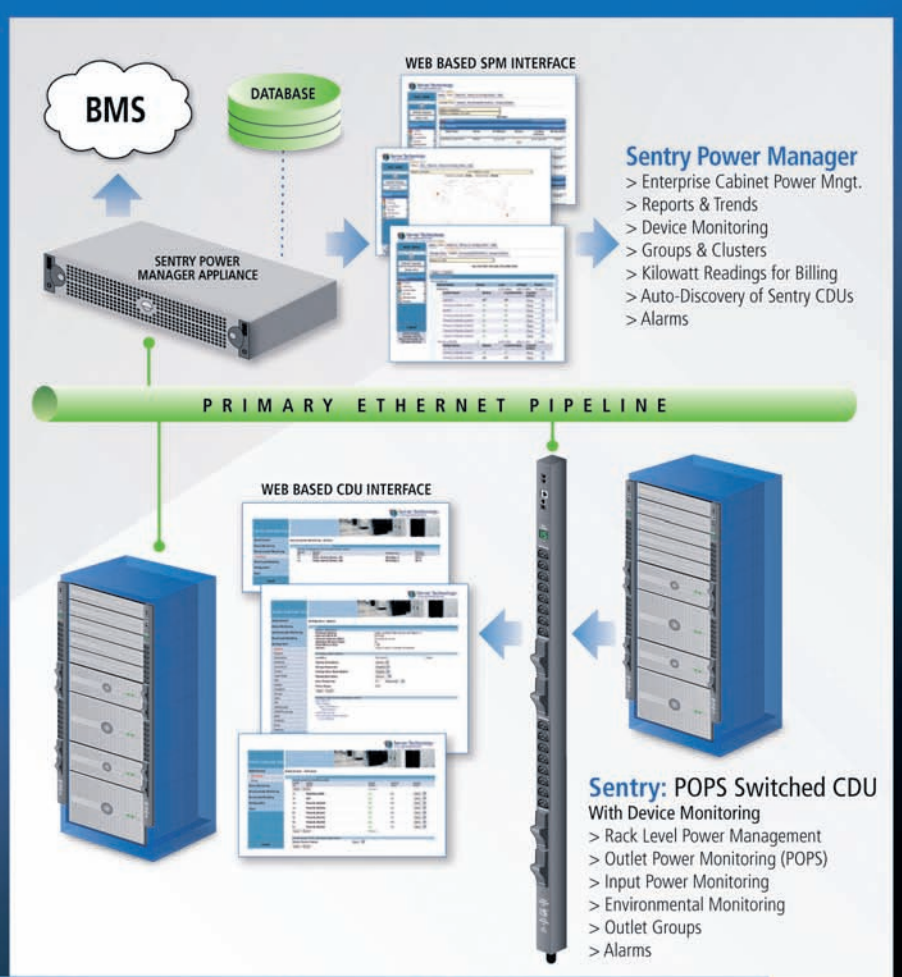


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News

## Small Businesses Boost PC Sales

Most SMBs—more than 77%—are maintaining or increasing their PC purchases this year after cutting back during 2009's poor economic climate, according to the "SMB Technology Report" from research firm The NPD Group.

NPD's survey drilled down to the reasons why companies were spending (or not spending) and found that 70% of the planned PC purchases were to maintain or upgrade their technology to keep pace.

"I think most of the replacement wave is getting to Windows 7," says Stephen Baker, vice president of industry analysis at NPD. "Now that Windows 7 is here, some of those computers are getting old, and I think everyone sees some productivity and some product benefits from upgrading."

Windows Vista was unpopular, he notes, and many companies waited to upgrade from Windows XP directly to Win7 when it came out last year. Thus, upgrading aging machines this year equates to moving from WinXP to Win7 for many.

The NPD report also found that although 70% of all surveyed companies were planning to maintain or upgrade as part of a longer-term plan, the demographic splits with 80% of companies with 200 employees or more and 65% of companies with 50 or fewer employees buying PCs for those reasons.

Baker says it's likely that smaller companies effectively upgraded piecemeal throughout 2009—that is, purchasing one new PC at a time as needed—whereas larger companies waited until Windows 7 was released to upgrade a fleet of PCs all at once.

### Spending On PCs

In addition to upgrading as part of a longer-term plan, the survey shows that SMBs are also spending on PCs to support new growth opportunities (51%) and to support new hires (41%)—a potential indicator that companies aren't feeling the pinch of the economy as acutely as they perhaps were last year.

Baker believes there may be other economic factors, as well. "The companies are happy because they may be spending about the same amount of dollars that they've spent in the past because prices have obviously come down considerably in the last couple of years. On the other hand, for the PC industry, you're seeing an increase in units, and the PC industry's always been very focused on unit growth and unit share."

With the current spending priority on PCs, the survey shows that companies are planning to spend about 32% less on non-PC hardware, particularly storage, networking, servers, and printers.

*by Seth Colaner*

COVER FOCUS

# Improve Data Center Uptime

## Even Small Changes Can Produce Big Returns

*by Carmi Levy*

• • •

**Although uptime** has always been a crucial metric for IT managers and the businesses they support, ongoing trends in data center design and methodology—including greater penetration of cloud-based services and the evolution of consolidation and virtualization beyond servers and into storage and networking—are raising the uptime stakes ever higher.

Thankfully, improving uptime need not break the bank or force a rethink of existing

IT priorities. In many cases, small changes to planning or procedures can return significant cost savings and risk reduction.

### Recovery Trumps Backup

Today's fast-paced business environment has exposed the limitations of traditional backup processes. Backed-up data can't properly support business needs if it isn't usable in real time during or following an extended outage.

"Simply backing up data doesn't make your business safe," says Moosa Matariyeh, an enterprise storage specialist with CDW (www.cdw.com). "Uptime is about avoiding system interruption and data loss alike, and timely restoration of data and services is just as essential as backup. After all, if it takes you three days or more to restore your data and systems, will your business be able to recover from the lost revenue and other business effects?"

Matariyeh recommends working with business stakeholders to establish the organization's RTOs (recovery time objectives) and RPOs (recovery point objectives). These metrics define uptime requirements for key business processes and drive the measures necessary to meet these tighter needs.

### Replicate Your Data Center, Partially

In an ideal world, data centers will always have nearly identical twin sites that support immediate failover in the event of a total outage. In the real world, budget constraints often make this an unrealistic dream. Reduced-scale redundant sites, however, could offer an affordable alternative.

"You don't necessarily need to replicate your entire data center in a second location," Matariyeh says. "But to preserve your company's resilience, it might make sense and be surprisingly affordable to replicate the most business-critical equipment, applications, and data in a second site, with application and data mirroring or backup to meet your RTO/RPO for core business processes."

Keys to success here lie in zeroing in on which applications and processes are core to your business. Consistent communication with business leaders ensures clear vision for data center managers charged with architecting limited-scope alternative sites.

### Rethink Your Power & Cooling Strategies

Power redundancy can have a huge impact on uptime. "Without redundant power to the computing equipment, any sort of power glitch or loss—even a momentary interruption—can bring down the entire data center with a cascading series of hardware and software failures," Matariyeh says, adding that an incorrect implementation of redundant power can still leave the business at risk. "Sizing of your backup power source is key, because if you undersize it, you may not be able to keep systems running to meet your RTO requirement."

Similarly, simply having generators isn't sufficient: Keeping them running for extended periods could be a challenge if fuel sourcing isn't properly planned. Jonathan Hoppe, president and CTO of Cloud Leverage (www.cloudleverage.com), recommends implementing redundant and diverse paths for refuelling.

For shops building new facilities, location relative to the grid could make the difference between uptime and downtime. "A grid with multiple substations is optimal, so power failures don't last long when they do happen," Hoppe says. "Locating in close proximity to a power source means fewer confounding variables exist."

On the cooling side, remember that effective data center management is very much like insurance: Make sure you're not unnecessarily exposed. Even minor in-service problems with cooling can quickly mushroom into significant downtime. Hoppe recommends against trying to save costs in cooling.

"Pay for elite maintenance," he says. "Premium-level preventive maintenance contracts should be entered into for all equipment. This includes generators, UPSes, and CRAC equipment, among others."

### Key Points

- Traditional backup plans are inadequate in today's accelerated, interconnected business landscape. Work with the business to understand and plan for the organization's recovery time and recovery point objectives.
- Maximize power and cooling redundancy and invest in ironclad service plans for cooling equipment to prevent meltdowns that can take down servers and availability.
- Decoupling software from hardware—a key feature of virtualization—can keep mission-critical business apps running on pooled hardware even if one of the underlying machines fails.

### Pay Particular Attention To Tape

Although tape is being supplanted by newer backup technologies, it remains a staple in many legacy environments. Jim O'Connor, director of product marketing at Bus-Tech (www.bustech.com), recommends regularly scheduling downtime for maintaining tape infrastructure. He recommends at least monthly cleaning and says organizations that stretch maintenance intervals are asking for trouble.

"As more time passes between planned downtime sessions, the larger the process becomes," he says, adding that this increases the amount of time that systems have to be down and raises the risk of experiencing unplanned downtime.

### Make Your Applications Mobile

This has nothing to do with smartphones. Application mobility exists strictly within the data center facility, and it works by separating software applications and their related business processes from the hardware on which they run. CDW's Matariyeh says removing the traditional physical connection between a given app and a given server—a handy benefit of virtualization and consolidation—also helps uptime performance.

"If server A breaks down, for example, the application migrates quickly and seamlessly to server B, reducing or avoiding downtime completely," says Matariyeh, who adds that application mobility can be achieved in two ways. Virtualization is the ideal choice, but in scenarios where it isn't feasible—either because the apps aren't supported in a virtualized environment or because it might demand too much overhead—server clustering can facilitate application mobility.

"Failure to implement application mobility means one strike—one hardware failure—and you are out," adds Matariyeh. "When a server goes down, it takes out the application running on it."

## Put Uptime In Its Business Context

It makes little sense to pursue greater levels of uptime without understanding the business value of the end result. Greater visibility into business drivers can help data center managers prioritize initiatives and drive greater ROI.

"Maximizing uptime requires a close look at the business continuity side of the business continuity/disaster recovery coin, as well," says Moosa Matariyeh, enterprise storage specialist with CDW (www.cdw.com). "Recovery time objectives (RTOs) and recovery point objectives (RTOs) are the starting point, and by involving key stakeholders to define needs clearly, businesses can set clear priorities and ensure that their uptime meets business needs."

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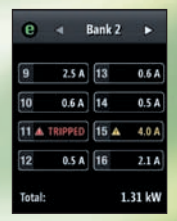


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*by Blaine Flamig*

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News

### Study Examines Third-Party Software Vulnerabilities

A recent report by security firm Secunia shows that software vulnerabilities are on the rise, especially in non-Microsoft programs. The study found that although Windows XP and Vista vulnerabilities will rise 31% and 34%, respectively, year over year, bugs found in third-party software will be up 92% this year—nearly doubling the amount in 2009. The report also found that 38% of all vulnerabilities can be traced to 10 vendors, among them Apple, Microsoft, and Oracle. Secunia researchers say that third-party programs contain more vulnerabilities because they often lack effective update processes; Secunia recommends that third-party vendors develop better patching methods in addition to writing more secure software.

### 64-bit Adoption Spikes With Win7

64-bit operating systems are capable of handling more memory than 32-bit versions, but for the first time, Microsoft is reporting that Windows 7 is close to achieving 64-/32-bit parity. After just nine months of availability, 46% of the installed base is running Win7 64-bit and 54% is running the 32-bit flavor. Vista, which has been available for three and a half years, shows an 11% 64-bit installed base, and Windows XP's 64-bit installed base currently stands at less than 1%. Microsoft claims the uptick in 64-bit adoption is due in part to wide availability of more competent 64-bit-capable CPUs and less-expensive memory as well as mass adoption from OEMs. Microsoft also quotes Gartner and The NPD Group, which claim that by 2014, 75% of all business PCs will be Win7 64-bit.

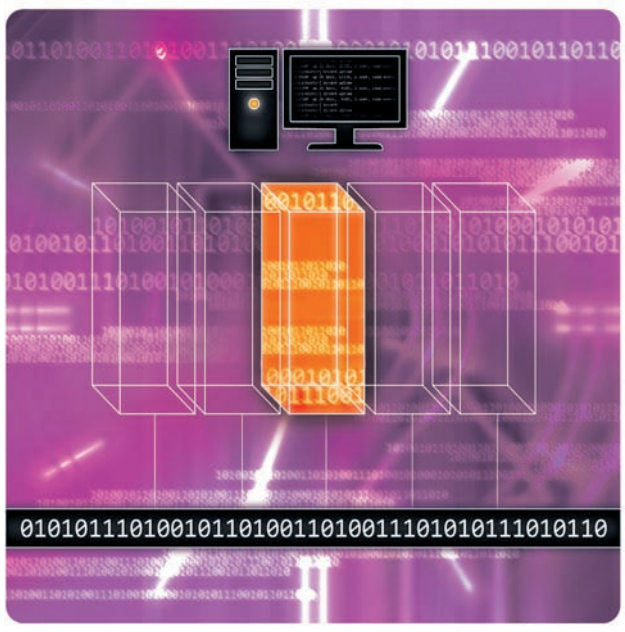
### IBM Announces Healthcare Initiative

IBM is prepared to spend some $100 million over the next three years to develop healthcare-related technologies and processes to aid healthcare providers and insurers. The company will use its own scientists—and experts yet to be hired, including nurses, physicians, and engineers—to help develop personalized treatment plans, simplify the delivery of health care, and help evolve medical care into a system that rewards improved patient outcomes. While acknowledging the importance of digitized health data, IBM spokespersons also note that more is needed, including, "enabling greater coordination between care providers and transforming data into clinical decision intelligence" to improve patient outcomes and lower healthcare costs.

### iPhone Lawsuit Is Now Class Action

A lawsuit filed against Apple has now been given class-action status. The lawsuit focuses on the fact that AT&T and Apple reportedly agreed to a five-year exclusivity agreement, which wrongfully locks in customers who signed two-year contracts because they are essentially tied to both companies for five years. Some say the exclusivity agreement ultimately hurts competition. The lawsuit also raises the issue of the amount of control Apple has over applications that are made available to iPhone users.

COVER FOCUS




# Smart Building Choices For Uptime

## Designing Your Structures Intelligently Can Keep Your Systems Up & Running Reliably

*by Sixto Ortiz Jr.*

• • •

**Uptime is job No. 1** for data center administrators tasked with keeping business-critical applications humming along uninterrupted. The penalties for unexpected data center downtime can be quite detrimental to a business, from loss of profits to unexpected maintenance expenses to damaged business reputation.

The task of developing a data center with consistent uptime begins well before construction starts. Enterprises looking to build new data centers or remodel existing ones must keep in mind there are numerous decisions early in the building process that can improve ultimate data center uptime and availability. Making good decisions during the data center design and building phases will pay big dividends later on when the data center is fully operational.

### Power Considerations

The power entering the data center is, obviously, critically important to steady uptime. An unreliable source of power can cripple data center operations by introducing an unexpected variable that's completely out of administrator control. Administrators engaged in data center design and construction must carefully analyze power considerations.

A primary power-related consideration is the need to ensure that the local utility is able to provide plenty of power reliably and consistently. Darren Bonawitz, co-owner of 1102 GRAND (www.1102grand.com), a data center in Kansas City, Mo., says administrators should talk with the electric utility company to ensure that the location they are looking at has adequate access to power not only for today's needs but also to support future growth. A planned data center expansion can quickly get derailed if a local utility cannot supply the additional power required for expansion.

A critical part of the power puzzle is the design of the power infrastructure required to run the data center. Jim Neumann, vice president of marketing at EDSA (www.edsa.com), a developer of power analytics solutions, says a perfectly run data center is the result of meticulous upfront design and relentless fine-tuning once operations begin. Neumann says power analytics software that designs and optimizes models of complex electrical power infrastructures can help administrators mitigate potential problems early during the design phase of the data center.

When the facility opens, power analytics software can continually compare "as is" and "as designed" performance to predict and prevent electrical power problems. The key, Neumann says, is to plan an efficient power structure and then continually monitor the system.

### Airflow & Cooling

Data centers are filled with servers, networking equipment, and other devices that generate heat as they operate. Thus, airflow and cooling are two crucial infrastructure elements that ensure equipment does not fail due to overheating issues.

**Key Points**

- A key part of data center design is the location of power suppliers that can provide power reliably, effectively, and consistently. Discuss power requirements with power suppliers in the area to ensure there is available power to meet business needs.
- Airflow and cooling are two infrastructure elements that can be designed for success during the data center design and construction phases.
- Successful data center design involves a variety of disciplines, including IT and infrastructure systems design. Bringing these disciplines together early in the data center design phase enhances the chances for success.

Steven Leidig, manager of enclosure engineering at Emcor Enclosures (www.emcorenclosures.com), says one of the most important initial considerations to help achieve long-term uptime and availability is proper airflow. Nonstandard configurations, Leidig says, should consider thermodynamic loading and analysis early in the design. There are tools, both analytical and empirical, that can help with this upfront design.

Also, when considering airflow, engineers must consider all system impedances, not just the fan/blower base cfm rate when performing airflow calculations. For example, Leidig says, filters restrict airflow, so when sizing the orifices, take into consideration installed configurations that may include cable bundles or other obstructions sharing the airway.

Poor cooling is another potential problem that can impact data center uptime. Eric Karmazin, managed services operations manager for Jelecos (www.jelecos.com), says inadequate cooling can bring a data center to its knees and result in clumsy fixes, such as the placement of noisy box fans to circulate out hot air.

Karmazin says that during the design phases, administrators should carefully assess rack capacities to ensure the proper amounts of amps/watts per rack are consumed to adequately keep the equipment cool and heat dispersed.

### Other Design Considerations

For a successful data center construction or redesign project, it is important to bring together all parties participating in the design process. For example, in order to help improve the ultimate uptime and availability of a data center during the building process, it is imperative to bring the facilities design company into the process very early, together with the facilities department and IT management, says Ian Jagger, worldwide marketing manager for Data Center Services at HP.

Then, there are a series of trade-offs that establish what the design criteria should be, including reliability vs. cost, high density vs. flexibility, and monolithic design vs. modularity, Jagger says. The higher the reliability requirement is, the higher it pulls energy, building, and operating costs. The key is to build along modular lines, as not all systems and applications are as critical as the next, he adds. Building pods and IT zones with different levels of appropriate availability lowers capital and operating costs significantly and delivers the right level of reliability while providing flexibility for capacity growth.

Other design considerations are to identify the criticality of the facility and applications hosted, design the uptime availability to meet the business risk, and carry out a fault tree analysis of the design, says Maurice Julian, UK facilities project director at HP. Design personnel should also design the infrastructure for ease of maintenance because overly complex systems lead to maintenance failures via human error.

## Is Colocation An Option?

Rather than building brand-new data centers, many companies are turning to colocation arrangements. This alternative to building a new data center can present companies with numerous advantages.

For example, outsourced service providers can offer hosting with multiple carriers, so administrators are no longer tied to a single supplier and physical infrastructure, says Kevin Dean, CMO at Interxion (www.interxion.com). If one carrier's system goes down, Dean adds, administrators can automatically switch to another, promoting resilience and ensuring availability.

Another advantage to colocation is the option to convert CAPEX to OPEX by outsourcing where possible and leveraging a shared infrastructure. Also, a company can spread the cost of using an enterprise-class data center while enjoying the flexibility of scaling requirements in line with business growth, Dean says. In this model, as a company pays for and uses what it needs, it also benefits from the inherent efficiencies in energy consumption that sharing an infrastructure with a number of companies brings with it.

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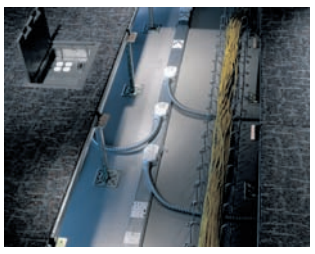

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PHYSICAL INFRASTRUCTURE | PRODUCT SPOTLIGHT

# Overhead Cable Management

## Product

### Black Box BasketPAC Cable Tray Sections & Individual Sections

### Description

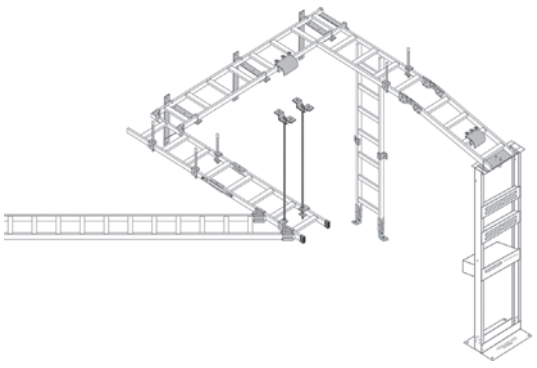
Black Box BasketPAC Cable Tray Sections are constructed of welded steel wire and ship with hardware that makes installation fast and easy.

- Four-pack cable trays come in 78-inch lengths (RM710A)
- Individual cable tray sections are available in 10-foot lengths (RM780)
- All trays are available in 2-, 4-, 6-, 8-, and 12-inch widths
- Joining method options include bolt-free splices and fast splices

**Best For:** Companies of all sizes that need easy-to-install overhead cable tray systems.

**Price:** Start at $199.95 (RM710A) and $68.95 (RM780)

### Black Box Ladder Rack (6’ x 12”)



Black Box’s cable management products carry a lifetime guarantee, and 99.96% of the company’s in-stock products ship the same day. Black Box’s 6’ x 12” Ladder Rack is available in gray (RM663) and black (RM650) options.

- 16-gauge tubular steel cable and mig-welded rack for routing cable along ceilings and walls and in closets
- Create custom cable-management solutions with 6- and 10-foot racks and a wide array of connecting and support hardware
- Side rails feature 0.375- x 1.5-inch tubing; strings are constructed of 0.5- x 1-inch tubing

**Best For:** Companies of all sizes in need of easy-to-install systems that can be routed along ceilings and up walls.

**Price:** Starts at $52.95

### CableOrganizer.com CM10 & CM20 Series Cable Trays

Designed for worry-free code compliance, the CM10 and CM20 Series wire-basket cable trays are easy to customize without structure-altering modifications. Prefabricated CM10 and CM20 reducers, turns, waterfalls, and junctions drop into place with no cutting, bending, or excessive hardware needed.

- Patent-pending design creates a continuous ground conductor without additional grounding splices or hardware
- Available in standard 2-, 4-, 6-, 8- and 12-inch widths
- Preformed drop-in turns, waterfalls, reducers, and junctions allow for customization without sacrificing code compliance
- UL certified and made of powder-coated zinc
- Installation hardware included

**Best For:** Creating customized cable tray runs without having to make noncompliant structural modifications.

**Price:** Starts at $6.93

## Product

### NetCablesPlus Fiber Surface Mount Box (6-Port)

### Description

Suitable for overhead projects, the NetCablesPlus Fiber Surface Mount Box includes write-on designation labels and port icons for easy identification. The boxes support 1-inch Snap-In Modules for different configuration of jacks and connectors.

- Breakouts on three sides for raceway or cable entry
- Modules snap out of the box’s front to make changes without opening the box
- Studs for cable-tie fastening
- Breakouts available in 0.75- x 0.5-inch, 1.125- x 0.75-inch, and 1.75- x 1-inch options

**Best For:** Data center multimedia and optical fiber applications of any size.

**Price:** $8.99

### NetCablesPlus Keystone Surface Mount Box (12-Port)

Designed for networking and multimedia applications, the Keystone Surface Mount Box from NetCablesPlus also works well for overhead cabling management and has a small, easy-to-install design allowing for different configurations of Keystone Jacks and Inserts.

- Snap-on top cover includes write-on designation labels, clear covers, station IDs, and mounting screws
- Breakouts included on three sides for raceway or cable entry
- Modules easily snap out of the box’s front to make changes without opening the box
- Studs for cable tie fastening

**Best For:** Organizing cables for Ethernet, A/V, and other applications.

**Price:** $6.99

### NetCablesPlus Tyton Raceways

Each Tyton Raceway from NetCablesPlus includes a large enough base to provide an excellent adhesive surface. An aesthetic, low-profile design blends into any environment, and numerous complementary fittings and accessories help adjust the run as needed.

- EIA/TIA-compliant
- Complies with industry-standard CAT 5 requirements for bend radius
- Constructed of 94V-0 PVC
- Multiple fittings available

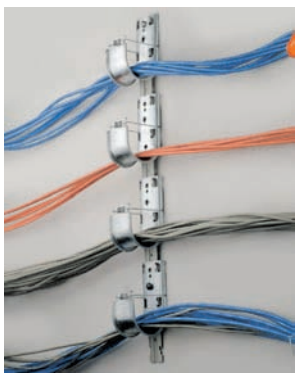
**Best For:** Data centers looking to hide a variety of cabling attractively.

**Price:** $11.99 (6 feet x 0.75 inch)

*Processor*'s Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

*Compiled by Blaine Flamig*

## CableOrganizer.com ERICO Caddy J-Hook CAT Link System



The ERICO Caddy J-Hook CAT Link System aerial cable hangers are designed for use with CAT 6a, CAT 7, and large-diameter fiber optic and coaxial cables and feature beveled, low-friction edges for easy cable pulls. The hangers can maintain large-bend radii, thus preventing cable damage and attenuation. They also support threaded rod, wall, beam, and bracket mounting options.

- No grounding, screws, rivets, or special tools required, saving time and money
- Bendable locking tabs secure cables into hooks and provide extra rigidity and structural support
- Enables easy expansion, as additional J-Hooks can be attached to existing ones
- Environmentally friendly construction consisting of 80% recycled steel

**Best For:** High-performance cable upgrades where adding to an existing cable support system is preferable to replacing it.

**Price:** Starts at $2

## CableTiesAndMore CM10 Cable Trays

CableTiesAndMore's CM10 wire cable trays feature a unique, innovative design that includes prefabricated junctions and intersections that allow for easy installation. The result is savings in time and installation costs.

- Only one tool required for installation
- No cutting or bending required
- UL rating means trays function as equipment grounding conductors
- Constructed of powder-coated steel

**Best For:** Building and other construction sites.

**Price:** Starts at $6.65

## CableTiesAndMore Wiring Ducts

Designed for use within cabinets and control panels, CableTiesAndMore's Wiring Ducts use a unique wire and cable management system that makes them suitable for office applications.

- Available in numerous sizes
- Manufactured of standard PVC or Noryl material
- Available in gray, white, or black
- Open Slot, Narrow Slot, Closed Slot, and Solid Wall options available
- Economical open-slot wiring ducts available for those on budget

**Best For:** Cabinets, control panels, and office use.

**Price:** Starts at $32.18

## NetCablesPlus Screw-Mountable Hook & Loop Cable Ties 10-Pack

NetCablesPlus' Screw-Mountable Hook & Loop Cable Ties make organizing overhead cabling easy. The nylon-based ties are simple to use and are reusable thanks to their self-attaching design.

- Available in 8-inch and 12-inch sizes
- Made of high-strength nylon hook and loop to securely organize cables
- Screw into plywood, wood framing, relay racks, and drywall
- Lifetime warranty

**Best For:** Overhead cabling organization needs in data centers of any size.

**Price:** $7.99 (10 8-inch ties); $9.99 (10 12-inch ties)

## Snake Tray 201 Series Tray

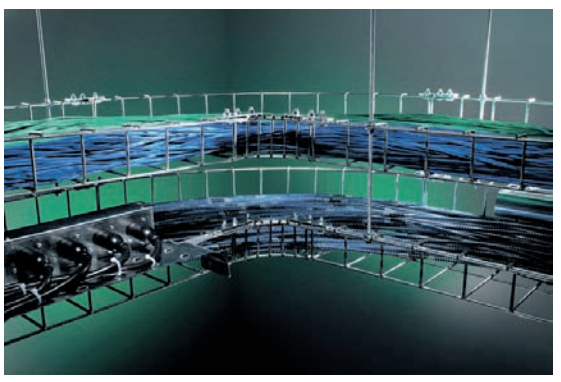
Snake Tray 201 Series Trays are hand-bendable cable trays designed for overhead use. Snake Tray 201 Series trays require no fabrication and come with built-in mounting hardware. Trays connect with one split bolt or inline connector and nest together for economical shipping and material handling.

- Available in various sizes
- Quick to install
- Patented hand-bendable design
- Built-in mounting rings
- Stack together to save on shipping

**Best For:** Government, retail, education, financial, industrial, marine, and other industries.

**Contact:** (800) 308-6788 | www.snaketray.com

## Snake Tray Mega Snake Cable Management Solutions



The Mega Snake is a high-capacity overhead cable tray that comes in premanufactured sections with a built-in mounting system to expedite installation. Accessories for Mega Snake include a series of power modules to deliver power overhead quickly and efficiently.

- Premanufactured components
- Patented accessory rail for hanging additional cable trays, patch panels, or power modules
- Trays stack together to save on shipping
- Built-in suspension system included that eliminates mounting hardware

**Best For:** Companies with high-capacity cable management needs.

**Contact:** (800) 308-6788 | www.snaketray.com

PHYSICAL INFRASTRUCTURE PRODUCT SPOTLIGHT

# Environmental Monitoring

**Product**

## AVTECH Room Alert 26W

**Description**

AVTECH's Room Alert 26W is an advanced hardware appliance designed for IT and facilities environment monitoring, alerting, automatic corrective action, and wireless sensor monitoring. It can monitor computer room temperatures, humidity, power, flood, room entry, and more in multiple locations. The Room Alert 26W's Wireless Sensor Hubs and Wireless Sensor Hub & Powered Relays communicate via a secure, private ZigBee-compatible protocol, letting users monitor a large number of indoor and outdoor sensors up to 250 feet away.

- Includes built-in digital temp, digital humidity, power and flood sensors, UPS, one external digital temperature, one external room entry, and one powered WiSH sensor
- Features six digital sensor ports and 16 channels for switch sensors or dry contacts
- Advanced alerting by email, email-to-SMS, SNMP, Web page update, and more
- Monitor units with built-in Web server, bundled Device ManageR, or any SNMP application

**Best For:** Enterprise-level monitoring in any location where running cables may be difficult or impossible.

**Price:** Starts at $995

**Contact:** (888) 220-6700 | www.avtech.com

## AVTECH TemPageR 3ER

AVTECH's TemPageR 3ER monitors temperatures in multiple locations and comes in a standalone or 1U 19-inch rackmount form factor. The TemPageR 3ER lets users log temperature sensor status for immediate alert notification, historical review, and graphing. The unit can also send alert notifications via email, email-to-SMS, SNMP, and more. TemPageR 3ER offers an easy-to-use Web-based interface for changing settings and viewing real-time sensor status.

- Real-time sensor status, data logging, graphing, advanced alerting, sensor values in alerts, high and low watermarks, and more
- Advanced alerting by email, email-to-SMS, SNMP, Web page update, and more
- Includes one internal temp sensor and two digital sensor ports for external digital temp sensors (one included)
- Monitor units with built-in Web server, bundled Device ManageR, or any SNMP application

**Best For:** Any facility that houses critical equipment sensitive to temperature and the environment.

**Price:** Starts at $225

**Contact:** (888) 220-6700 | www.avtech.com

## Black Box AlertWerks II ServSensor (EME108A)

The AlertWerks II ServSensor is a solid environmental monitoring hub that's easy to manage across your IP network. As a central component of the AlertWerks environmental monitoring system, this unit bridges your network with your AlertWerks Intelligent Sensors to let you remotely view the status of your data centers and other facilities. Monitoring functions include temperature, humidity, liquids, and open doors. Supported applications include remote monitoring of HVAC systems, security equipment, UPSes, generators, and industrial equipment.

- Eight ports accept a range of sensors, including temperature, humidity, water, and airflow
- Extensive management and notification features
- Includes data collection and graphing package

**Best For:** Organizations that need general-purpose environmental monitoring.

**Price:** $650

**Product**

## Rackmount Solutions' Remote Physical Monitor

**Description**

The Uptime Devices Remote Physical Monitor unit from Rackmount Solutions supports remote monitoring that lets users protect equipment and sensitive electronics. The RPM uses Remote Intelligent Multi Sensors technology, which lets it collect environmental and security data to send out alerts via email, SMS, or SNMP when the monitored equipment exceeds the user-defined limits. Each unit has a battery-backed clock for accurate recording, and the device also supports up to 250 different RIMS, located up to 1,000 feet away.

- Real-time monitoring of temperature, humidity, airflow, and dry contacts
- Dry-contact sensors for use with 10-port dry contacts and HEAT RIMS
- Monitor and control third-party power strips
- Two-port power RIMS monitor, track, and manage IT equipment current load and voltage

**Best For:** Data centers and standalone applications that require temperature, humidity, and remote power management.

**Price:** Starts at $985

**Contact:** (866) 207-6631 | www.rackmountsolutions.net

## Server Technology Environmental Monitoring Control Unit-1-1B

Server Technology's EMCU (Environmental Monitoring Control Unit)-1-1B is an IP-based product that monitors temperature and humidity, features water and fluid sensors, supports four dry contact door sensors, and accommodates additional power-fed analog input sensors. A Web interface provides at-a-glance reports of temperature, humidity, water detection, and cabinet door status.

- Support for HTML and command-line interface
- Supports two temperature and two humidity measurements out of the box
- No additional software necessary
- Mounting tabs included for 0U mounting

**Best For:** Data centers, colocation sites, Web hosting facilities, telecom switching sites, POP sites, server closets, and any unmanned area that needs to be monitored.

**Contact:** (775) 284-2000 | www.servertech.com

## Temperature@lert USB Edition 4.0

Temperature@lert's USB Edition 4.0 is a low-cost, high-reliability temperature monitoring device that's easy to install and use. Users set their own temperature thresholds and receive email alerts when the temperature reaches these limits. With USB 4.0 software and the optional Dashboard browser-based Web interface, users can set up text, email, and phone alerts for multiple alarm limits.

- Real-time temperature alerts and temperature graphs (0.5 degrees Celsius accuracy)
- Connect to any computer or Windows server, including Windows 64-bit systems
- Data files for Web sites and reports available, including text and XML log files or SNMP
- Capable of sending alerts to one or more email addresses

**Best For:** Situations requiring reliable temperature monitoring on a budget.

**Price:** $129.99

**Contact:** (866) 524-3540 | www.temperaturealert.com

PRODUCT SPOTLIGHT PHYSICAL INFRASTRUCTURE

*Processor*'s Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

*Compiled by Andrew Leibman*

## Black Box AlertWerks II ServSensor Junior (EME102A)

The AlertWerks II ServSensor Junior is designed to provide detailed insights into the environmental conditions of smaller installations. This unit can be used as the central hub of the AlertWerks environmental monitoring system to track temperature, humidity, liquids, and open doors. Other applications include remote monitoring and management of HVAC systems, security equipment, UPSes, generators, and industrial equipment.

- Two ports accept a range of sensors, including temperature, humidity, water, and airflow
- Java-based Web user interface provides hub access over any IP network
- Sends alerts through SNMP or email

**Best For:** Organizations with limited environmental monitoring requirements.

**Price:** $250

## Black Box AlertWerks II ServSensor V4E Hub (EME134A)

The AlertWerks II ServSensor V4E is a real-time environmental and video monitoring and alerting system that lets users integrate environmental sensors and surveillance cameras into a single seamless remote monitoring system that keeps tabs on your equipment and facilities. This product is ideally suited to data center and office monitoring, but it also works well wherever you need real-time monitoring and surveillance.

- Supports up to eight plug-and-play Intelligent Sensors
- Can be daisy-chained to expansion hubs, increasing the total sensor count to more than 600
- Supports up to four surveillance cameras
- Extensive management and notification features

**Best For:** Organizations that require security as well as environmental monitoring.

**Price:** $1,395

## Opengear ACM5004-G-E-US

The Opengear ACM5004-G-E-US offers network managers cellular GSM access to temperature, smoke, motion, and water detection in remote sites without general network access, making it ideal for keeping tabs on devices in small and large distributed networks. Customers can use the device to centrally monitor the remote outlet power status, centralize alarms, and set up automatic shutdowns to be triggered in the event of outages or excessive operating temperatures.

- Remote device server with both Ethernet and 3G GSM Cellular Connectivity
- Four RS-232 serial ports
- Two USB and one Ethernet port
- Four digital I/O ports for external environmental sensors and internal temperature monitoring

**Best For:** Distributed enterprise, bare metal remote install, retail, PoS, and kiosk environments.

**Price:** Starts at $700

## Temperature@lert WiFi Edition TM-WIFI200

Temperature@lert's new Wi-Fi-enabled sensor monitors ambient air temperature and emails you when the server, telecommunications, or computer room (or other enclosed space) gets too hot or cold. The unit doesn't require a PC to run and is built around a highly customizable version of Linux. WiFi200 displays the current conditions and a graph of the day's temperature readings. When temperatures exceed the user-set temperature thresholds, the device sends an email or multiple email alerts with the Dashboard Web browser service (optional). Text message and phone call alerts are also available.

- Monitor one or two sensors per unit (0.5 degrees Celsius accuracy)
- Enhanced security; does not reside on computers or servers
- 802.11b/g wireless Internet and wired Ethernet interfaces
- Logs temperature readings to text and XML log files
- Up to 10 sensors available per base unit (special order)

**Best For:** Compact spaces and large-scale deployments where a customizable device is necessary and a direct connection to computers or servers is not possible.

**Price:** $299.99

**Contact:** (866) 524-3540 | www.temperaturealert.com

## Temperature@lert Cellular Edition TM-CELL300

The third-generation Temperature@lert Cellular Edition Model 300 monitors one or two ambient temperature sensors and sends email, text message, or voice alerts when the temperature exceeds user-set limits. The Model 300 supports one or two sensors and can store and forward readings when the device is out of cellular communication range. Setup is easy; users can plug it into a wall outlet and go. A built-in battery backup lets the device operate for up to four weeks without power. The Advanced Alerting feature lets you know when the device has been out of communication or when it stops functioning.

- Monitor one or two sensors per unit (0.5 degrees Celsius accuracy)
- Reports the temperature every 15, 30, 60, 120, or 240 minutes
- Stores and forwards up to 1,500 readings when out of cellular signal range
- Maintains temperature history online with the included Advanced Alerting Dashboard
- XML feed for easy integration with other applications

**Best For:** Geographically distributed, remote, or mobile facilities and for situations where monitoring is needed even when power outages occur.

**Price:** $399.99 plus monthly monitoring plan (starting at $15/month)

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News

## Report: Unsupported Apps & Devices Affect Network Security

According to a multinational survey of IT staff involved in policymaking and/or purchasing decisions, employees' personal electronic devices and favorite applications are increasingly making their way onto company computers and thus the corporate network.

Working on behalf of Cisco, InsightExpress surveyed 512 IT security decision makers at companies located in the United States, China, India, Japan, and Germany that employ 100 or more employees.

"It is important to know not only what devices, networks, and applications are being used, but also to understand why they are being used," writes Christopher Burgess, Cisco senior security advisor, in a company blog post. "It is very infrequent an employee will purposefully use a new tool or capability with the purpose of putting their employer/employment at risk."

About 56% of survey respondents reported that employees have been using unauthorized programs on company computers; two-thirds (68%) use social networking, InsightExpress said. Collaborative Web apps and peer-to-peer software were also named as commonly present.

The use of unsupported network devices is also prevalent, according to the study. This comes in spite of the fact that 40% of IT security professionals said that their companies had experienced data loss or a breach due to this phenomenon.

"I wasn't surprised to read that those with a highly restricted environment still faced employees using unsupported devices and methods," Burgess says. "This is analogous to when the ground is saturated and more water arrives, the employee, like the water, will find an available route to connect and engage, even if it isn't the employer's preferred route."

### Flexible Policies

Remarkably, 53% of respondents—especially those in the emerging markets of China and India—said that their companies would continue to allow employees to use personal devices in the workplace over the course of the next year. The same pair of countries led the 71% majority of IT pros that recognize that security policies that are too restrictive tend to drive away workers under 30.

In place of draconian restrictions, Burgess advocates "a clear and concise code of business conduct and information handling policy" that is regularly communicated to existing staff as well as new hires. "With such articulation and demonstration, you raise the level of understanding that your employees will not only comply with your desired restrictions surrounding the data, but also they will actually know when they may be putting their employer at risk and, by extension, their employment at risk," he writes.

*by Marty Sems*

PHYSICAL INFRASTRUCTURE

# Realistic PUE

## The Metric Isn't The End-All When Measuring Energy Efficiency

*by Jean Thilmany*

• • •

**With more enterprises** evaluating their PUE (power usage effectiveness) numbers, IT managers should know that, although the numbers may range, the typical efficient data center's number is 2.5, according to the Uptime Institute. Others say it's about 2.1.

But they should also know that, for a variety of reasons, they may have a difficult time getting below that 2.1 number.

The PUE standard, published by The Green Grid, is the ratio of total facility power consumed to the IT equipment power consumed. Although PUE is nice to know, it's not the end-all and be-all when it comes to measuring energy usage, says Jack Pouchet, director of energy initiatives for Emerson Network Power (www.emerson.com). That's because it's a measure of the total energy used by the data center; it doesn't measure IT productivity.

**Key Points**

- If you can't measure PUE, tracking total power usage monthly works, too.
- At smaller enterprises, small energy changes can bring down PUE.
- PUE shouldn't be used to compare data centers to one another.

But measuring it can still be helpful, he says. "In fact, if you do nothing more than identify, monitor, and report your data center's total energy consumption on a monthly basis and compare that to your IT workloads, you're light years ahead of your peers," Pouchet says. IT workloads include applications, bit traffic, and storage volume and traffic.

PUE is a metric and is specifically not intended to compare one data center to another but to serve as an internal benchmark for improvement within a single data center. It is commonly misused to compare data centers, says Tom Deaderick, director at OnePartner Advanced Technology and Applications Center, a commercial hosting facility (www.onepartner.com).

For instance, a data center running at full capacity with an inefficient design would score better than an efficient data center at startup or lower capacity, making PUE a useless metric for data center comparison, Deaderick says. Rarely will a competent engineer advocate running any system at the maximum range of its capacity, as this is typically a recipe for disaster, he adds.

### High PUE?

For many enterprises, even getting a broad estimate of power used by the data center is an enterprising start, Pouchet says. That way, IT managers will have a number to measure against as they strive to reduce power use. For small to medium-sized enterprises where the data center is part of the office building, this broad estimate might mean simply tracking the overall power use each month, he says.

But IT managers at small to midsized enterprises are to be congratulated for having the wherewithal to determine their PUE numbers. Many don't, he says.

Still, the more granular the monitoring, the more precise the number, Deaderick adds. Power strip monitoring is more precise than branch circuit monitoring, for instance.

So what do you do if you find your PUE is extremely high as compared to the 2.1 number found in some of the most efficiently operating data centers? First off, don't despair, Pouchet says. Again, PUE exists on a continuum and will be different for every data center, depending on the enterprise it powers.

The good news, says John Consoli, CTO at data center resource solutions provider AFCO Systems (www.afcosystems.com), is small to medium-sized enterprises will have a much easier time reducing their PUE numbers and gaining efficiency. He uses a miles-per-gallon analogy.

> "If you do nothing more than identify, monitor, and report your data center's total energy consumption on a monthly basis and compare that to your IT workloads, you're light years ahead of your peers."
>
> *- Emerson Network Power's Jack Pouchet*

"We'd expect more miles per gallon with a smaller car than we'd see with an SUV, because a smaller car is easier to deal with and control, and making small changes makes for a bigger impact," Consoli says.

In fact, PUE averages are largely determined by measuring PUE at large data centers of typically more than 30,000 square feet, he adds. "So the impact of reducing PUE in a smaller data center is probably better than at those large centers," Consoli says. "I'm using my personal experience and common sense to say that."

### Bring It Down

If your PUE is higher than you'd like, you have quite a few options when looking to lower that number. Think of the goal as increasing data center efficiency rather than reducing PUE. Smaller centers should begin their increased efficiency efforts by thinking small, Consoli says.

Start by looking at areas that may be mismanaged through simple oversight, he adds. Determine whether any air conditioners could be turned off at certain times or could be replaced by more efficient models. Install blanking panels inside racks so cold air is used more efficiently; test unused servers and turn them off if they're truly not needed.

Also, look to virtualize your servers, which is one of the most effective tools for energy conservation, Deaderick says. A single virtualized server can replace multiple traditional servers to substantially reduce heat generation and power consumption.

Pouchet recommends calling in the professionals. Consider bringing in consultants that will go over the data center with a fine-tooth comb and recommend changes to improve energy efficiency. After a certain point, he reminds IT managers, your PUE will be as low as it can get. "Once you get your PUE to about a 2.1 at a small or medium[-sized] business, you're home free because there's not too much else you can do to make a change," he adds. P

## Cut Energy Costs

About 80% of energy costs for data centers is split between the IT load and cooling that load, so logic dictates that this is where the focus should be when looking to cut energy costs and improve PUE, says John Consoli, CTO at data center resource solutions provider AFCO Systems (www.afcosystems.com).

Remember this rule of thumb: Each watt of power delivered to a data center will be converted to a watt of heat. By 2012, a dollar will be spent to cool each dollar of power delivered to the data center, he adds.

When it comes to reducing energy costs, Consoli says, focus on purchasing efficient IT equipment by looking at things such as the U.S. Department of Energy's Energy Star ratings. Also, he adds, maximize the efficiency of your cooling plant and take advantage of free cooling such as outside air.

Key Points

- IPv6 creates a logically separate network from the existing IPv4 Internet—and your company's networks, if they are still using IPv4.
- Whether or not your company moves to or adds IPv6, check whether your carrier supports it, including whether it offers transit to reach IPv6 networks and whether it can connect email, Web, and DNS servers via IPv6 as well as IPv4.
- Most new network gear should include and support both IPv4 and IPv6, but now is the time to start checking.

# Get Ready For IPv6

## The Next Version Means Transition Planning, Some Upgrades & Tweaks

*BY DANIEL P. DERN*

*As its name implies, IPv6 is the sixth version of IP, the Internet Protocol layer of the TCP/IP suite. IPv6 is set to take the place of IPv4, the current standard and the one used by most existing networks. Here is a look at the reasons for the switch and what we can expect from the new standard.*

### WHY THE CHANGE?

IPv6 is intended to address some limits of IPv4; in particular, it aims to resolve the problem of "address exhaustion," meaning IPv4 is running out of blocks of IP addresses. IPv6 also adds some security measures, although those features, such as IPsec (Internet Protocol Security), have since been added to IPv4.

According to Richard Jimmerson, CIO of ARIN (the American Registry for Internet Numbers; www.arin.net), address exhaustion is close at hand. "We expect to deplete the IPv4 pool of available addresses early next year," he says. "Any new growth [or] new devices we want to put on the Internet will have to use more aggressive network address translation (NAT) or use IPv6."

In addition to dealing with address depletion, IPv6 is important for many end-to-end applications, notes Timothy Winters, software engineering manager at the University of New Hampshire's InterOperability Lab, which operates Moonv6, the world's largest IPv6 test bed. "End-to-end is where all the cool stuff happens," he says. "Without IPv6, you'll need servers, proxies, and other solutions to problems you can avoid by using IPv6."

### THE HARDWARE ASPECT

For data centers, SMEs, and other IT groups, IPv6 is something that has to be researched thoroughly and acted on with care and planning.

In terms of your network and computer hardware, "Most of the gear you've bought in the last five to seven years is already IPv6-capable; it's a matter of configuring IPv6 on that device," Jimmerson says. "Some devices may not have it but can be updated using firmware updates. Some older equipment . . . may not be IPv6-capable and need replacing."

"Moving to IPv6 may result in surprising peripheral and component upgrades," cautions Tom Henderson, managing director and principal researcher for Extreme Labs.com. "Network Wi-Fi access points, network printers, scanners, and faxing devices may need upgrades for IPv6 support or may need IPv6-to-IPv4 concurrency schemes to allow them to work. Especially important is the fact that some organizations must completely redo their network address translation (NAT) tables to accommodate both IPv6 as well as subsequent IPv6-IPv4 translation schemes. It's dirty work."

But your IPv4 devices and networking should continue to work. "IPv4 won't go away," ARIN's Jimmerson says. "You can probably leave all those devices out there. You're worried about the communication servers on the edge of your network."

### WHAT SHOULD IT BE DOING?

Determining whether your ISP can provide IPv6 and/or tunneling is job one, Jimmerson says. "Call your ISP and let them know you want your mail, Web, and DNS servers on both networks." Also, companies need to get transit—the ability to connect to other networks—from their ISPs for IPv6 in addition to the IPv4 transit they already have.

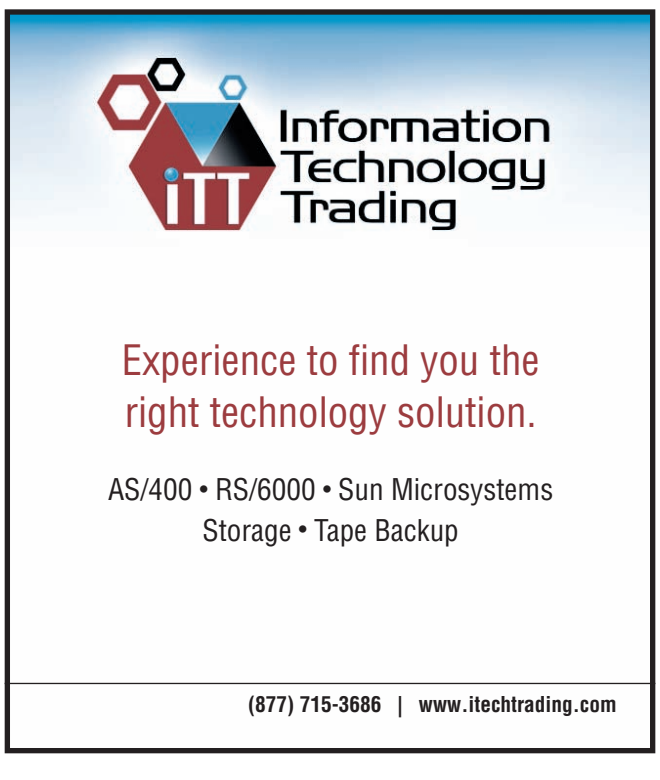
Secondly, determine whether any of your devices aren't IPv6-capable and do upgrades as needed. Finally, make sure that new equipment, particularly routers and servers, is IPv6-capable as well as having IPv4.

"Tell your staff that's responsible for running the network to begin preparing for IPv6," Jimmerson says. "They will need to do research [and] take a look at the network to see what will need to be updated to run IPv6." Many companies, Jimmerson notes, will find that the equipment they have supports this, and that it's not as hard as it might be. P

### Changes From IPv4 To IPv6

- Expanded addressing capabilities
- Header format simplification
- Improved support for extensions and options
- Flow labeling capability
- Authentication and privacy capabilities

SOURCE: "IPv6 TUTORIAL" BY JORDI PALET OF CONSULINTEL FOR ICANN; DECEMBER 2006



News

## IBM, EU Form Consortium To Study Cloud Computing

IBM is partnering with the European Union and a host of universities to study cloud computing, including how it is used and how it can be more beneficial to enterprises. The cloud computing consortium aims to reduce costs and create a more manageable, flexible software solution in cloud environments. IBM Research created the ACSI (Artifact-Centric Service Interoperation) last year with the goal of creating a new computing model in which cloud computing processes would be coordinated into a centrally managed "interoperation hub." Researchers will be taking over the ACSI project; universities in the UK, Italy, Belguim, Estonia, and the Netherlands will be involved.

## Report: IT Employment Volatile

IT employment may be hit by a double dip in the current recession, according to research by Foote Partners. The research group analyzed the U.S. Department of Labor's most recent labor statistics and found that the IT employment market has entered a seesawing period, where overall hiring of full-time IT employees will be volatile, but there will be a strong need for some specific skill sets. Areas of need include enterprise resource planning, virtualization, security, and SANs. The study also showed a 30 to 40% volatility of premium pay for certified and noncertified IT skills.

## Report Ranks Intrusion Prevention System Vendors

Infonetics Research released its "IPS Product Vendor Ratings: North American Enterprise Survey," showing that Cisco is the leader in the market. Infonetics says that Cisco leads in both revenue share and brand awareness. The research group says McAfee, IBM ISS, Sourcefire, and TippingPoint (post HP integration) have the best chance of competing head-to-head with Cisco for pure IPS sales over the next two years, but Infonetics expects Cisco to maintain the lead in market share and brand awareness. Infonetics forecasts that the IPS market will jump from $800 million in 2009 to $1.2 billion in 2014.

## Snooping On The Rise

Sensitive and confidential information in enterprises is increasingly at risk, and IT administrators are more often the culprits. In a survey conducted at the 2010 Infosecurity Europe and RSA USA conferences, two-thirds of survey respondents claim to have accessed information for which they had no business need, and 41% say they have used administrative passwords to see sensitive or confidential information. This is up a third over a similar study last year. Favorite targets include customer information and human resource records. If threatened with termination tomorrow, most respondents say they would not try to take confidential information with them. A third of the respondents' employers have been victims of insider sabotage and security fraud, with ex-employees being the primary culprits. About 90% of those surveyed say employee monitoring should be used as a way to remedy the situation.



# Server Benchmark Performance Testing

## How To Assess New Equipment

*by William Van Winkle*

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**JUST AS IT MAKES SENSE** to test drive a car before buying it, most enterprises will want to benchmark their prospective hardware and applications before committing to deployment. If an enterprise is large enough or has a sizable enough prospective order, it can usually request review samples from multiple vendors and carry out a benchmarking "bake-off" in-house. But even the smallest companies can still order in one unit, benchmark it, and compare against results from other testers. This also applies to components, as when weighing different CPUs or memory configurations. Benchmarking removes much of the guesswork from equipment buying, but the process isn't without its twists and caveats.

For starters, those new to testing should understand that there's a significant difference between benchmarking servers and benchmarking a client desktop. With a client system, it's usual to install a benchmark application on a single PC, run it, and get results a few minutes later. Server benchmarks often require a significant amount of storage and/or client systems to drive the server. After all, servers are serving. Demand must either come from a host of client devices or other servers simulating those devices and flooding the main server with requested data.

IT managers must decide what exactly needs to be tested. If the object is to qualify systems for a particular application deployment, check out specific benchmarking tools meant for those applications. While examining application-level performance, it also pays to benchmark specific subsystems that heavily influence application performance.

"If I'm a business with a Web server and a general business server and a database server," says Robert Burroughs, director of data center marketing operations with Intel, "I could choose to buy three different servers, one for each application. Or it may be more appropriate to want just one system built in such a way to accommodate them all. You use a variety of benchmarks to help make that decision." With five or six benchmark results in hand, notes Burroughs, performance trends should be fairly clear. Ideally, an organization would want to benchmark its own workloads, but even large enterprises struggle with this because of setup complexity and costs. Industry-standard benchmarks may not be a perfect match for real-world data, but the results will be close enough to be useful.

Note that benchmark characteristics and result interpretations can change over time, especially in regard to "soak testing," wherein systems are stressed over a prolonged period in order to better simulate real-world usage. Whereas a client system benchmark might only run for a few minutes, a server test will likely run for many hours or days and will likely require three such runs in order to verify consistent results.

### Benchmarking Limitations

Benchmarking is simply a tool, and like any tool, it can be used poorly. Industry standard benchmarks will typically include extensive documentation detailing how tests should be set up and run so that results will be repeatable. Some tests will also demand third-party auditing, which can prove to be a costly extra. Businesses may opt to sidestep these requirements in some cases, but this may reduce the benchmark's usability because there will be no reliable basis of comparison against other organizations' test efforts. Also keep in mind that benchmarking configurations that were pertinent years ago may no longer be so today, or they may be too costly to still use.

Over-reliance on benchmarks can be another trap for enterprises. For instance, David Morse, engineering manager for the server and storage performance analysis team at Dell, notes seeing many businesses try to size virtualized server deployments simply from the results of VMmark (www.vmmark.com), today's industry-standard benchmark for application performance in virtualized environments. This can lead to incomplete or misled conclusions.

"Typically with VMmark," says Morse, "you have very lightly loaded VMs that run over and over again. You're stacking them like tiles. Eventually, that can saturate a server, but in real life, you're not going to run hundreds of VMs." Additionally, Intel's Burroughs cautions that though an application may offer a host of results numbers, not all of them should be heeded equally.

Although tuning of this or that system variable is an important part of the benchmarking process, tinkering is also one of the chief ways in which benchmarking can go astray, especially when it comes to improperly set BIOS options. Again, adherence to procedural documentation is essential. This also extends to ensuring that hardware is properly configured. Burroughs notes having seen multiple occasions when businesses would call or post about horrible benchmark results, only to find that testers had placed all memory modules behind a single CPU instead of evenly distributing them across all CPU channels. Similarly, the use of an older operating system version because it just happened to be on the shelf but wasn't properly patched can drag down scores. Even an older version of a benchmark can yield meaningless data, as when trying to test multiprocessor performance when the benchmark itself isn't multithreaded.

Enterprises without a lot of resources to invest in building and tweaking systems would be wise to work with hardware and application vendors to obtain test systems that are already preconfigured for benchmarking. This will help reduce potential errors and hopefully accelerate the decision process. P

### Key Points

- Benchmark testing can and should play a key role in the evaluation and purchasing process for new server systems and their applications, but expect proper server benchmarking to be orders of magnitude more involved than client PC benchmarking.
- A mix of system-wide as well as component-level benchmarks can yield a more complete, useful set of data for managers.
- Misconfiguration is one of the leading causes of flawed benchmark results. Adhering to industry-standard benchmark procedure guidelines can help obtain consistent, useful results.

> "Typically with VMmark, you have very lightly loaded VMs that run over and over again. You're stacking them like tiles. Eventually, that can saturate a server, but in real life, you're not going to run hundreds of VMs."
>
> *- Dell's David Morse*

### Is Being No. 1 Important?

Some people get worked up about being the "best" and buying whatever platform happens to be at the top of a certain benchmark's results list. Dell Engineering Manager David Morse counsels that this attitude may be misguided. Focusing on configuration and settings is likely more cost-effective.

"Benchmark results tend to be pretty short-lived," says Morse. "If the run rules are written well, you're required to list all the tunings that you used to get the result. That way, others can come along and use similar tunings on a similar platform and expect to get similar results. In these cases, systems will usually be within 1% to 2% of each other. Just because a vendor's system doesn't have the No. 1 position at any given time doesn't mean they're not neck and neck."

# Using SSL Proxies To Block Unauthorized SSL VPNs

## Thwart Them With An Internal SSL Proxy

*by Kurt Marko*

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**From the Internet's** primordial days as enterprises connected internal networks to global cyberspace, there's been a tension between the need to maintain speedy, reliable, and safe Internet connections and an employee's desire to use those fat pipes for personal play and pleasure. IT has always been in the middle of this tug-of-war, enforcing usage restrictions to prevent squandering network resources critical to business applications while trying not to be a network nanny.

Firewalls, IT's first layer of defense, proved inadequate to prevent browsers from using public Web proxies to bypass outbound filters. Application layer content filters, the next line of control, created a quasi arms race as determined users looked for increasingly ingenious means of circumvention. "It's sort of like playing Whac-A-Mole," says John Brozycki, a security researcher and information security officer.

Unencrypted proxies used to reroute browser traffic and avoid firewall rules and Web content filters were easily thwarted; however, crafty users migrated to encrypted SSL sessions. These are problematic because most standard content filters can't parse encrypted traffic and unfettered SSL access is a business necessity, critical for securely accessing SaaS applications, legitimate Web sites, or B2B e-commerce transactions. Furthermore, SSL is often the preferred means of creating enterprise VPNs, allowing mobile workers and telecommuters access to corporate networks by tunneling other network protocols through an encrypted Web port. Sensing this opening, SSL VPNs "have become standard issue in the arsenal of attackers," says Karl Altmann, president and CEO of Microdasys (www.microdasys.com). "SSL has become the weapon of choice to conceal attacks," he explains.

### Content Filtering & Anonymous Proxy Usage

Determining whether illicit SSL proxies are a problem isn't a trivial exercise, but there are certain telltale signs. As with detecting most network anomalies, log files from routers and security appliances are the best sources of data.

Brozycki, who authored a paper for the SANS Institute on proxy detection and prevention, says there are online resources that track anonymous proxies daily. IT staff can use the tracking sites to create firewall blacklists or to collect data tied to traffic to known proxies. For enterprises using application-layer filters, another tipoff of proxy usage, according to Brozycki, is the presence of long, base64 encoded URLs in the session logs. Brozycki explains that proxies often use this encoding to make page names obscure. He adds that commercial providers often operate SSL proxies, and they are unlikely to change their domain names, making them easy to detect. He says another sign of SSL proxy usage is a suspiciously high ratio of SSL to unencrypted HTTP traffic.

Altmann says another indicator is that most noncommercial SSL proxies use self-signed certificates, which aren't automatically trusted by browsers. This can spark a browser warning, which might be ignored by motivated employees but is easily spotted by investigating IT staff.

Some employees may try to evade policy by using other types of VPNs, such as PPTP and L2TP/IPsec. These are widely available from public providers, and the client software is built into Windows; however, because they don't use the common Web ports, they are easily detected. Because most employees have no need for outbound VPNs, you can block these VPNs at the firewall with exception rules added for systems such as B2B apps that initiate encrypted connections.

### Blocking SSL Proxies

Although blacklisting using infrequently updated proxy lists leaves easily exploited gaps, recent security appliances use globally collected, dynamically updated databases of site reputation to augment enforcement rules. While these are certainly more effective than static blacklists, they are not perfect, says Cisco Security product manager Samantha Madrid.

Altmann believes that the best way to counter rogue SSL proxy and VPN usage is to use an internal SSL proxy to intercept and inspect all SSL sessions. A detailed technical discussion of SSL proxies is beyond the scope of this article, but as Brozycki puts it, "They act as a trusted man in the middle," emulating a common hacker technique to intercept, log, and retransmit all traffic without either side of the network transaction being aware of the surveillance.

The basic idea is that the proxy intercepts outbound SSL requests from the employee's PC, relaying it to the destination server. The proxy receives and then masquerades the server's public certificate before returning it to the client, which accepts the imperceptibly altered copy, completing the SSL handshake. At this point, the proxy has an encrypted session with the client using the "fake" server certificate and a like encrypted session with the Web server using the real one. Subsequent HTTPS requests get decrypted at the proxy, filtered through a policy and content inspection engine, and then get dropped or re-encrypted and passed on to the client and server.

Altmann says a full pass through the policy engine is often not required because many illicit proxies or VPN tunnels can be detected by merely examining the certificate.

Because an internal SSL proxy scans all traffic at the network gateway, Altmann says it can also detect and block rogue VPNs and malware (because SSL is increasingly used for malware data theft and as the command and control channel for botnets).

### Recommendations

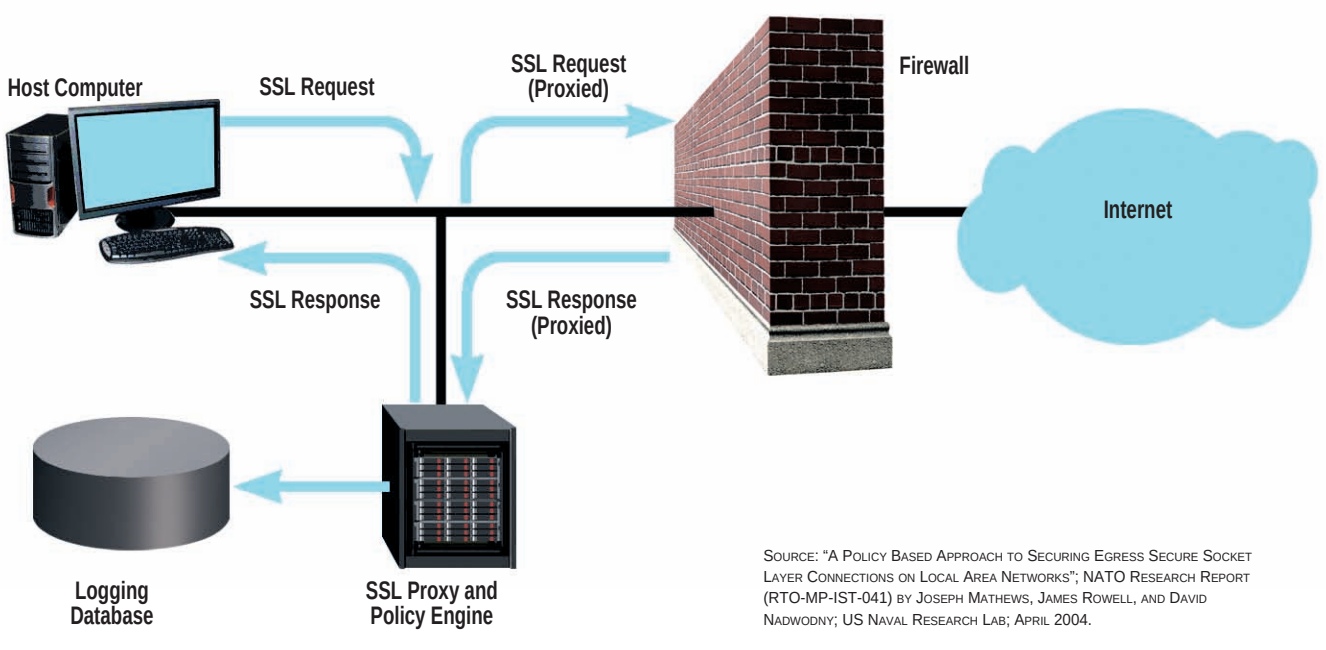
Augmenting existing content filtering with the ability to scan SSL traffic is rapidly becoming a necessity with the advent of what Altmann describes as "the always-on SSL Web." He says that many online services, from email to SaaS applications, now default to SSL connections. Madrid adds that allowing SSL traffic to bypass normal gateway security appliances creates a major security risk, and inability to examine encrypted traffic leaves a gaping security blind spot. She adds, "The problem of anonymous proxies and SSL site is multifaceted; although most administrators think of the problem from an [employee] productivity standpoint, it's truly a huge security risk," because SSL lets users bypass all network security barriers, including malware scanners, not just content filters. P

### Key Points

- External, public Web proxy servers have been a favorite tool for employees seeking to evade corporate restrictions on Internet use, but Web content filters can easily thwart them. Switching proxies to SSL bypasses most filters because they can't handle encrypted traffic and because most companies grant unfettered SSL access.
- Detecting use of SSL proxies is tricky, although there are telltale signs available in firewall or router logs, such as an unusually high level of SSL traffic, access to known commercial proxy providers, or appearance of encoded, obscure URL strings in log files.
- Routing all SSL traffic through an internal SSL proxy, augmenting existing Web content filtering with the ability to decode SSL sessions, is the surest means of eliminating this tactic of bypassing corporate network security measures.

## SSL Interception By Proxy

The interception method for SSL is relatively well known. The method involves intercepting the outgoing SSL handshake from a client to server, forging the server's reply back to the client, and then forwarding the traffic along to the actual destination. This enables the SSL traffic leaving the network to be seen in cleartext while passing through a proxy, prior to being forwarded to its destination. This graphic depicts an SSL connection leaving the client and getting through the proxy.




Source: "A Policy Based Approach to Securing Egress Secure Socket Layer Connections on Local Area Networks"; NATO Research Report (RTO-MP-IST-041) by Joseph Mathews, James Rowell, and David Nadwodny; US Naval Research Lab; April 2004.

FEATURE PACKAGE

**Cloud Computing**

There's plenty of confusion surrounding cloud computing. We attempt to clear some of it up with key information regarding what cloud computing is (and isn't), preventing problems, and more.

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■ Is the future of the enterprise in cloud computing? The answer to this may still be up in the air, because when it comes to cloud computing, there is still quite a bit of confusion and apprehension, especially among data center and IT managers at small to midsized enterprises.

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■ Here is a look at some security and other concerns that might prevent small to midsized enterprises from adopting cloud computing and the cases third parties must make to demonstrate they can overcome the challenges.

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■ Cloud computing offers processing power and speed to market that make it beneficial for many small and medium-sized enterprises, but there are also instances when cloud computing isn't the best strategy.

**Calculating Cloud ROI** | 28

■ A careful ROI analysis will help you to figure out what, if anything, you should take to the cloud.

# What Cloud Computing Is & Isn't

## Clear Up The Misconceptions & Concerns That Surround The Cloud

*by Chris A. MacKinnon*

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**Is the future of the enterprise** in cloud computing? The answer to this may still be up in the air, because when it comes to cloud computing, there is still quite a bit of confusion and apprehension, especially among data center and IT managers at small to midsized enterprises. Here we'll define what cloud computing is, and also what it isn't, to bring some clarity to the issue.

### Why The Confusion?

Although cloud computing did attract attention and still continues to gain awareness, the actual adoption among small to midsized enterprises has only been a trickle, according to Karthik Viswanathan, head of marketing at Aspire Systems (www.aspiresys.com). "While the early adopters among large enterprises and start-ups have already joined the cloud bandwagon, SMEs are prudent in their approach to cloud adoption," Viswanathan says. "The economic conditions in 2009 were not encouraging. The IT spending of SMEs drastically reduced in 2009, with focus only on buying tested and proven IT that helped reduce costs."

Kevin Epstein, vice president of marketing at CloudShare (www.cloudshare.com), says there is confusion because cloud is simultaneously poorly defined and widely hyped as a must-have element of IT. "In a large company, you can assign someone to be your cloud expert, and you buy something labeled 'cloud' from one of your standard vendors and trust that if you pay them seven figures, they'll make whatever it is work," Epstein says. But in a smaller company, he adds, you need to personally be the expert and make cloud work, even as the definition of cloud changes by the hour. Epstein says it doesn't help when marketers everywhere deploy smoke and mirrors around existing products and label it all a "cloud."

For Kelly Beardmore, CTO and COO at Tenzing Managed IT Services (www.tenzing.com), cloud computing is the concept that enterprises can consume IT services as a utility. "Like electricity," Beardmore says, "you subscribe to a service provider and pay for what you use. But the confusion starts where the analogy stops. Unlike common utilities, IT services are not created or consumed homogenously. IT services is an umbrella term for many different things—from CRM (customer relationship management) to data center infrastructure to ITSM (IT service management) best practices—and each can be spoken of in the context of the cloud." Beardmore says that as a result, the message to the end user about what the cloud is can vary considerably depending on who is speaking.

### What Cloud Is

Vishal Sharma, senior director of cloud computing at NaviSite (www.navisite.com), says that at a very high level, cloud computing is all about delivering and consuming IT as a service in an on-demand fashion. "Cloud computing is both an evolution and a revolution," he says. "From a technology perspective, cloud computing is a natural evolution of technologies and approaches, such as virtualization, automation, integration, and utility computing. The revolution is around how IT resources are managed and delivered."

According to Beardmore, there are many different types of clouds. "There are public clouds, private clouds, semi-private clouds, global clouds, [and] regional clouds, as well as private SaaS (software as a service) and multitenant SaaS," he says. "Each is a variation on the 'IT services as a utility' theme created by the different business requirements of cloud services consumers and the technological and business limitations faced by the producers of these cloud services."

Beardmore explains that to data center or hosting service providers, the cloud is the ability of the end user to subscribe to raw compute, storage, and network resources on demand to support enterprise workloads by utilizing virtualization technology at various levels of the infrastructure stack. To the SaaS provider, on the other hand, the cloud is the ability of the end user to subscribe to business services online. "What was once delivered to the enterprise's IT department as a software package to deploy is now delivered on demand directly to the end user via an Internet connection," he says.

John Barnes, CTO of Model Metrics (www.modelmetrics.com), says cloud computing at the highest level is defined as "computing power or services that are delivered over the Internet by an outside company as a utility and are billed based on usage." Barnes notes, "The services fall into three main categories, SaaS (software as a service), such as Salesforce.com or Gmail; PaaS (platform as a service), such as Force.com and Google App Engine; or IaaS (infrastructure as a service), such as Amazon Web Services."

### What Cloud Isn't

In Barnes' opinion, cloud computing should not be confused with the older hosted ASP (application service provider) model where a firm would host an instance of an on-premises application for you. "Many software companies are trying to do this and claim it is cloud computing," he says. "True cloud computing vendors are multitenant (that is, all clients running on the same stack) and running 'version now' (every one is on the current version)."

According to Beardmore, any IT service that is not consumed over the Internet is not considered cloud computing. He says there are some that like to equate cloud with "elasticity," rather than the utility model, and thus, nearly any in-house virtualized compute environment becomes a cloud. But this only adds to the confusion. "Also, any IT service that is not consumed on a subscription (that is, a recurring billing model based on actual usage) is not considered cloud computing," Beardmore explains, adding that "it is important to note that the degree of flexibility around usage rates, both at a contract and operations level, varies considerably from service provider to service provider."

Epstein says that at the end of the day, be confident in your judgment and don't be swayed by hype. "Great cloud vendors won't force you to change what you're currently doing in IT; they let you do the same things but in faster and more efficient ways," he says. P

### Key Points

- There are many different types of clouds. Each type is a variation created by different business requirements of consumers and the technological and business limitations faced by the cloud makers.
- Do not confuse cloud computing with the older hosted ASP (application service provider) model in which a firm hosted an instance of an on-premises application for you.
- Cloud computing can be defined as computing power or services that are delivered over the Internet by an outside company as a utility and are billed based on usage.

### Evaluating The Cloud

According to John Barnes, CTO of Model Metrics (www.modelmetrics.com), SMEs should consider the following things when evaluating cloud computing:

- Think about the existing system requirements you have, or need, that can be met by a SaaS provider.
- Consider moving any remaining applications to an IaaS (infrastructure-as-a-service) provider. There is generally a great ROI in doing so, and there is no good reason for an SME to be in the data center business.
- Remember security. If you choose a good provider, the security in the cloud is better than what you can build yourself.

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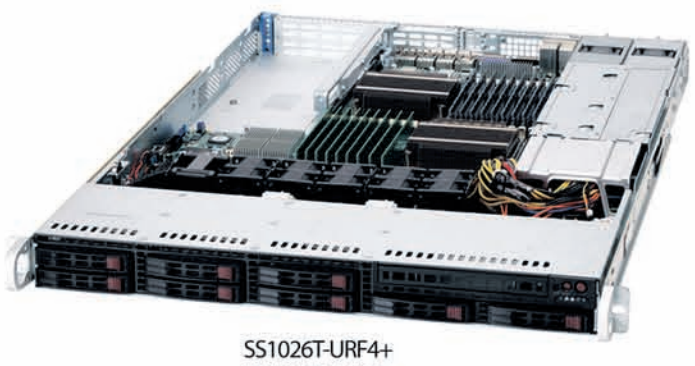

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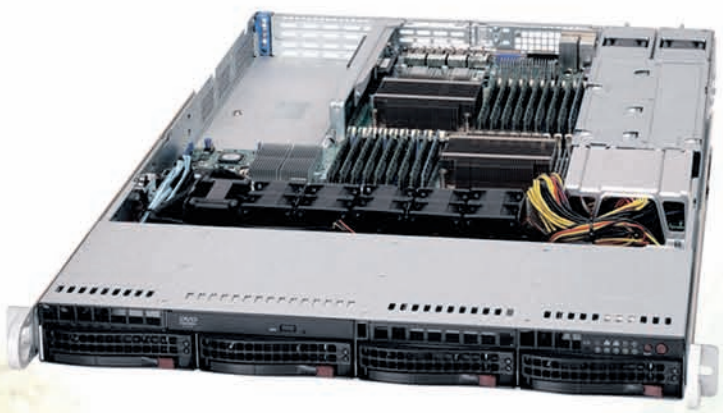

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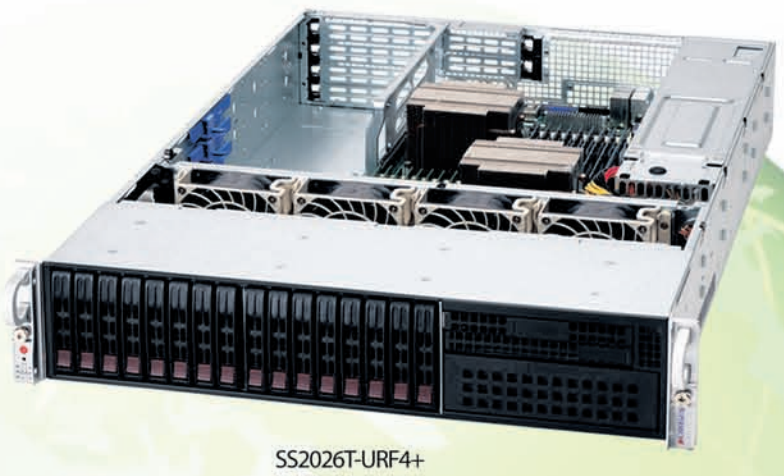

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FEATURE PACKAGE

# Easing Cloud Concerns

## SMEs Are Understandably Cautious, But Cloud Computing Is Becoming More Reliable & Secure

*by Bruce Gain*

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**Admins are often wary** of cloud computing, and for good reason: Putting your enterprise's data and applications in the hands of a third party can seem like a risky venture. The lack of direct control over security and other processes, the specter of data losses and breaches, and the knowledge that a third party has access to sensitive information are just a few of the many worries SMEs have. But what must service providers demonstrate so that an enterprise can be confident about the providers' security plans and other processes?

Here is a look at some security and other concerns that might prevent small to midsized enterprises from adopting cloud computing and the cases third parties must make to demonstrate they can overcome the challenges.

### When Things Go Wrong

Data loss happens, whether due to disasters, human error, or both, and can even cause an enterprise to shut its doors if that data cannot be recovered. That knowledge is scary enough, but data loss is even more daunting if your enterprise's information is lost out in the cloud somewhere. "We all know that technology breaks," says Scott King, vice president of operations at The Planet (www.theplanet.com). "It is thus critical to determine how your enterprise and a vendor can effectively respond when there is a disaster and what kind of backup process is in place so that data and applications can be rapidly accessed again if needed."

**Key Points**

- Vendors must demonstrate that they are equipped to handle disaster recovery, outages, and data breaches.
- In most cases, a credible cloud provider's security process is better than those most small to midsized enterprises can afford.
- Providers should be completely transparent about their process and the physical location of data, and SMEs should do their due diligence when choosing a provider because there are currently no industry standards in place.

Specifically, King recommends asking how often backups are done, how long data is stored, and how often is the system tested. "I would get very detailed on what type of backup solution is going to be used," King says.

Additionally, King recommends SMEs ask vendors to divulge their metrics about uptime and to explain how many outages they have had and for how long. Treat the process like a job interview and check the references given by the potential provider. "When you check the provider's references, verify what their track record is with customers," King says. "Also, do an Internet search for news of previous outages."

Data breaches are another concern, even among credible service providers. The key is to prepare for the worst, says Clive Longbottom, service director of business process facilitation at Quocirca (www.quocirca.com). "By no means will an external [service provider] be completely immune to data breaches, and part of going to an external provider is making sure that a Plan B is in place to manage what happens if there is a data breach," Longbottom says.

### Losing Control

In many ways, trusting a third party to manage your enterprise's data and processes is like taking a plane. Airplane travel is frightening for many because they have no direct control over how the plane is flown, meaning their lives depend on the competency of the pilot. Similarly, relinquishing so much control to a cloud computing provider makes many admins nervous.

However, just like most people cannot pilot a passenger plane, many enterprises are unable to successfully implement security practices and processes in-house. Therefore, Longbottom says, it's likely that credible cloud service providers offer a better security package than most enterprises.

"Most organizations have abysmal levels of security internally, yet worry about how a professional entity whose very existence depends on being able to demonstrate its own security capabilities will deal with its data," Longbottom says.

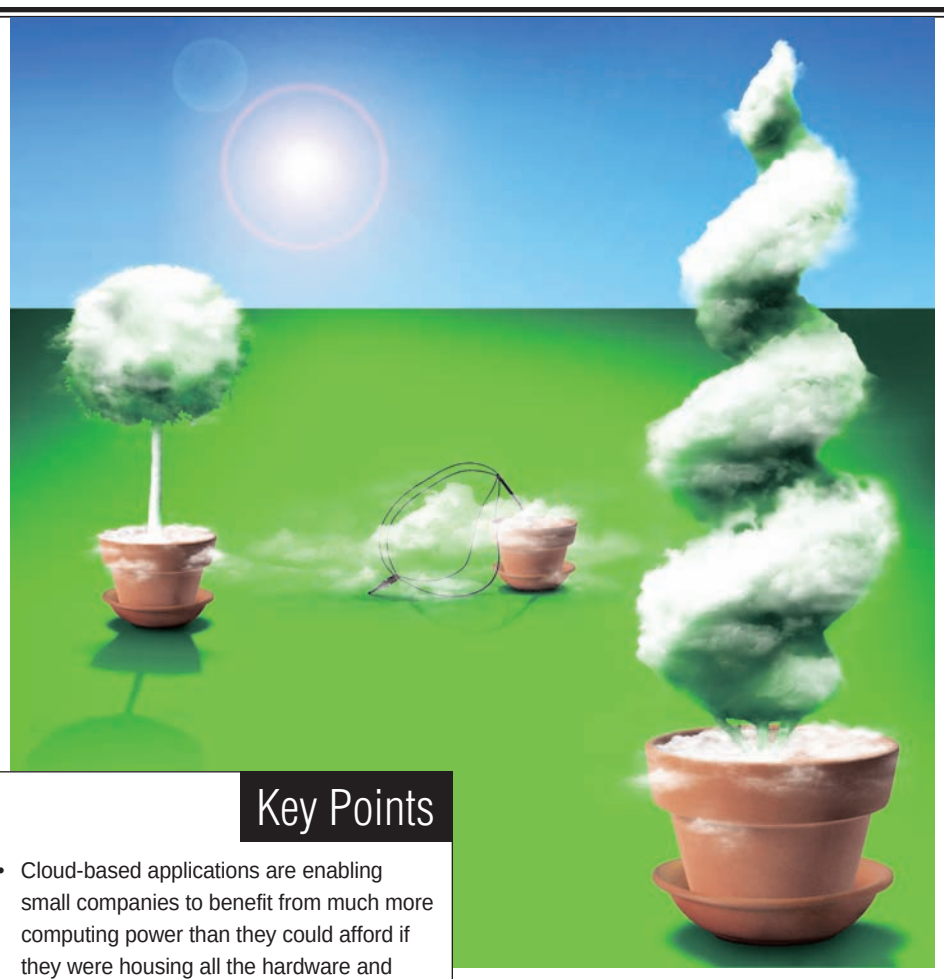
### Making The Cloud Transparent

There are vendors available for managing almost any computing need an enterprise has. Most promise robust security and compliance with industry regulations, but many times, after an enterprise's legal department approves the fine print of the agreement, the company finds it doesn't know many specifics about the cloud provider's processes and how it manages data in the cloud. To that end, enterprises should avoid providers that are not completely transparent about their processes or where your data will be located.

"Some of these outfits might just be a front end," says Joseph Malec, a security analyst and president of the St. Louis chapter of the ISSA (Information Systems Security Association; www.issa.org).

# Current Cloud Successes & Failures

## Cloud Computing Can Work Wonders, Although It's Not For Everyone



*by Phil Britt*

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**Cloud computing offers** processing power and speed to market that make it beneficial for many small and medium-sized enterprises, but there are also instances when cloud computing isn't the best strategy.

"The cloud enables consumption based on what is required at the time of subscription, without a lot of upfront investment. It thereby enables a pay-as-you-grow model, bringing down the TCO dramatically and making it affordable for SMEs to adopt the service," says Anupam Sahai, president of eGestalt (www.egestalt.com).

SMEs that are succeeding with cloud-based systems say they are doing so because the cloud enables them to leverage what resources they do have, be they security, hardware, or personnel resources. However, cloud computing doesn't work for everyone. Here is a look at some of the current successes and failures in implementing cloud computing.

### Doing More With Less

Marc Chaikin, CEO of Chaikin Stock Research, credits cloud computing for enabling him to launch tools that enable investors to make more informed financial decisions.

"By using the cloud, we were able to use our resources for product development and marketing," Chaikin says. "If we hadn't used the cloud, we would have been using resources for hosting applications, cooling, hardware, and communication lines. We would have been stuck in an endless loop of hardware purchases and upgrades, getting a T1 or T3 line and managing that facility. We didn't have the resources or the management for that."

Chaikin Stock Research looked at larger cloud providers but chose to go with a smaller company that focuses on financial professionals, providing better speed and security than other solutions, according to Chaikin, who points out that both are essential for an investment environment.

Chaikin has some technology savvy but lacks the resources to handle all of the investments and updates needed to provide his services to his clients; however, some emerging businesses have even less in terms of technical know-how and financial capital to run the in-house systems they would need to make their businesses viable if not for the cloud, according to Rob Dieterle, senior vice president and general manager of Smart Online.

**Key Points**

- Cloud-based applications are enabling small companies to benefit from much more computing power than they could afford if they were housing all the hardware and software themselves.
- Charities and service organizations, with fewer resources than private firms, are finding that cloud-based services help with their fundraising activities.
- Some companies find that some applications run better in-house, particularly applications that firms use frequently.

Smart Online provides all Internet-related services, including accounting, ecommerce, Web site, subscription management, and motivational books and products, for a direct sales organization that sells household products and related goods and services to consumers.

Many of these salespeople have little or no training in sales. Many are doing this for additional income while holding down a full-time job, Dieterle says. So the sales organization, which includes 5,000 members, relies on the cloud-based system to provide its products and services as well as to track all of this information for the heads of the organization and for their

"They take your data and have no transparency."

Enterprises must be able to talk to providers' security people and get the information they need, Malec says. "In a lot of places, you can tour their facilities so you can check that they can handle the data that is coming over the Internet to them," Malec says. "You need to be sure that they are transparent and that they have the right controls in place."

## Lack Of Security Ratings

Although a solid security plan usually consists of many of the same features, there is still no widely accepted standards body, such as an ISO standard, that can audit security and give an industry-recognized stamp of approval for a cloud computing provider. However, as the cloud gains popularity, it's likely that a common security standard for service providers will be developed, says Andrzej Kawalec, director of services development and innovation for HP's Vistorm. "We will get to a place where vendors and service providers are going to have to work together to deliver security across the cloud in a standard way," Kawalec says. "Without a common standards body that can audit firms, however, it is necessary for enterprises to do the audits and often the security verification and management themselves."

Until an industry-wide security standard is adopted, enterprises must create their own lists of security processes and check that a cloud vendor under consideration has those processes in place.

"You absolutely must be conversant with the vendor's security approach by understanding the procedures they go through and how they perform their admin tasks and are involved in the setup," Kawalec says. "There is a large degree of due diligence that the client needs to perform to get the trade-off between the risk parts and the economically advantageous delivery mechanism [that cloud computing offers]."

## A Cloud Provider Security Checklist

The idea of relying on a third party to manage your enterprise's data security can be a scary thought. However, a firm that demonstrates that it can meet your security demands can go a long way toward proving that it is up to the job. Clive Longbottom, service director of business process facilitation at Quocirca (www.quocirca.com), recommends creating a list of the areas that a provider should cover, including:

- Admin passwords not shared
- Data backup and restore policies
- Encryption of data sent over the cloud
- Encryption of stored data
- Full data mirroring
- ISO levels of security processes
- Multiple load-balanced data connections ensuring that no single connection carries the full stream of an organization's data
- Physical protection of data stores
- Record checking of employees to ensure clean backgrounds
- Use of data interrogation technologies for data leak prevention

"downlines," many of whom Dieterle says are just starting out.

Smart Online recently started providing similar services for charities, which have many of the same issues in terms of restricted resources, Dieterle says. Because of their limited resources, charities need to actively seek donations to continue their work. One of the more popular fundraising programs for many charities is shopping programs in which the charity receives a percentage of the sales, including "market day" grocery programs and programs that provide gift cards for various retailers. Those programs tend to do most of the ordering via paper forms for donors/buyers.

Smart Online's program is geared toward online shopping, with a virtual mall that enables donors/shoppers to buy what they want online with a portion of the proceeds going to the charity the donor designates. The charities don't have the resources to operate an online mall themselves, Dieterle says: "They need the technology in order to succeed."

Online fundraising is imperative for charitable and service organizations today, says Gerry Holmes, director of IT for the Canadian Cancer Society, which has handled fundraising through cloud-based services for a few years. Givers provide sponsorships for runners in charity runs and participants in other fundraising events through online donations.

"The complexity and security for credit card donations is much higher than we could provide on our own," Holmes says. Cloud computing lets the organization maximize its resources. For more information on the Canadian Cancer Society's cloud experience, see the "Success With Private Clouds" sidebar.

## Cloud Isn't Always The Answer

Despite the many successes companies are having using the cloud, it's not for everyone.

Such was the case with a Chicago-based project engineering company, according to Jeremy Treister, owner and president of CMIT Solutions (www.cmitsolutions.com), a managed service IT firm that helped the company with many of its IT needs.

"About two years ago, [the project engineering company] had grown to the point that they needed Web-based document management," Treister explains. "They had different teams in different locations across the country."

Using Microsoft SharePoint document management and BlackBerry Enterprise Server in the cloud enabled the remote teams to communicate effectively. But the problem was that the home office, which had daily needs for different Microsoft programs that were running in the cloud, was seeing too much latency in the operation of the applications, according to Treister.

"The majority of their work was done in the office. But using the cloud, they always were dependent on an Internet connection," Treister says. "We provided a faster pipe to the Internet, but that didn't help with their daily office needs."

Treister found that there were too many hops before the person in the office could access and use the cloud-based applications. Additionally, there were delays once the application was in use. So, CMIT took the Microsoft Exchange Server and BlackBerry Server out of the cloud and installed it onsite. The remote users connect securely via the Internet and have no more latency than they experienced using the applications in the cloud, according to Treister.

## Success With Private Clouds

A private cloud can provide many of the same synergies as the public cloud. Such was the case for the Canadian Cancer Society, says Gerry Holmes, the organization's director of IT.

"When I arrived here four years ago, we had 40 different offices. We were experiencing tremendous challenges trying to keep up with the servers in the field," Holmes says. So the organization chose to go to centralized rather than distributed data processing, moving servers from the remote offices to a central location, with access via a private cloud.

Latency was a concern, Holmes says, but the organization found success with a WAN optimization solution that uses caching to limit the need to resend duplicate packets, enabling the technology to communicate quickly over the WAN.

By using the WAN optimization solution and installing VMware to virtualize the data center, the organization has gone from 40 servers distributed throughout the organization to only eight, all located in a central location. Maintenance, hardware, and software costs have all dropped. Phone costs are likely to drop, as well, thanks to a new VoIP system, which Holmes says was much easier to install with the centralized, private cloud configuration.

# News

### WinXP Downgrade Rights Extended

Some Windows 7 users will be allowed to downgrade to Windows XP for two years after the Win7 sales cycle has ended, Microsoft says. Customers will have to purchase a downgrade license to replace the newer Win7 OS, however. This announcement comes after Microsoft had already extended the downgrade deadline. Originally, Microsoft was only going to provide downgrades through April of this year, but that deadline was later pushed back to October 2011. Microsoft will stop supporting WinXP in April 2014.

### SCO Files Appeal

SCO Group has appealed the ruling issued by a judge in the U.S. District Court for the District of Utah in its ongoing fight against Novell. In 2004, SCO had sued Novell over the rights to Unix and later brought claims against Novell for slander and breach of good faith. SCO is currently challenging all prior decisions and hopes to get a new trial through the 10th Circuit Court of Appeals. The latest ruling came in June when Novell's request for declaratory judgment was granted, and the judge closed the case.

### Webroot Acquires BrightCloud

Webroot, a Colorado-based provider of antivirus and antispyware solutions, announced its acquisition of BrightCloud, a San Diego-based Web security service provider that was founded in 2005. Webroot says BrightCloud will continue to function within Webroot's Cloud Engineering team and will later be combined with Webroot's malware detection and SaaS solutions. According to Quinn Curtis, president and CEO of BrightCloud, the company is excited to become a part of Webroot because it will allow it to provide better protection, service, and value to its customers.

### Electronic Medical Records Catching On

One out of every two healthcare professionals is now using digital medical records in their practice, according to new research. Knowledge Networks conducted a survey of about 11,000 specialists and primary care physicians and reported 10 to 12% respective growth in their use of EMRs since 2008. Plenty of doctors also own smartphones: 62% of specialists and 55% of primary care physicians now have them. In addition to email and Web access, doctors frequently use their smartphones to communicate with sales reps from pharmaceutical companies, often as a replacement for face-to-face meetings, the study says.

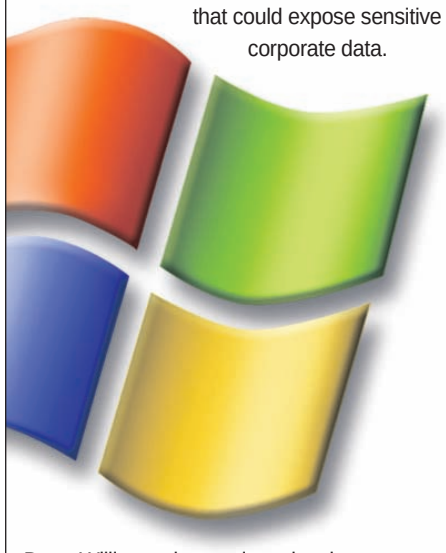
### Laptop Maker Breaks New Record

Setting its highest record for revenue and shipments in June, Quanta Computer distributed 4.8 million laptops and pulled in $100.2 billion in revenue. This topped the company's previous record of 4.5 million notebooks shipped and $97 billion in revenue. Quanta produces laptops for several manufacturers, including those for Sony, Dell, and HP, which are equipped with the Core i3 and i5 chipsets. This technology lets computer makers produce compact laptop designs with almost the same amount of power as a larger laptop.

News

## Study Shows Older Versions Of WinXP Are Still Prevalent

Microsoft stopped supporting Windows XP Service Pack 2 as of July 13, but analysis from Softchoice shows many organizations have yet to upgrade to Service Pack 3. According to the technology solutions and services provider, about half of the 278,498 corporate and public sector PCs it analyzed have not upgraded to Service Pack 3, and more than 75% of companies Softchoice surveyed are still running WinXP SP2 on 10% or more of their computers. Without Service Pack 3, these organizations will be left without critical security patches that could expose sensitive corporate data.



Dean Williams, the services development manager at Softchoice, says many organizations are unaware that they haven't yet deployed Service Pack 3. Although many of Softchoice's customers have technology in place that provides them with information regarding their operating system deployments and what their service pack level is, Williams says there is a lack of processes and people to ensure there's a regular rhythm of review that involves looking at any gaps between the company's policies, general benchmarks and standards, and the actual state of the organization.

"It's our view that customers simply are not looking at these things from a proactive standpoint. They're looking at their asset management data [and] their inventory data in a reactive mode. When something goes wrong, they'll take a targeted look at any information they might have about it. The average customer spends most of their day just keeping the lights on, keeping the network up, keeping things running, and putting out fires. Very little time is left to focus in on taking proactive measures of the state of the organization," Williams says.

### Temporary Solution

Deploying Service Pack 3 is only a temporary solution, however, because Microsoft currently plans to stop supporting that in 2014. Williams says organizations should focus on making sure Service Pack 3 is deployed and then figuring out how to invest in a newer operating system.

WinXP, says Williams, represents a time when ecommerce and online banking, for example, weren't commonplace. "The amount of data that a customer is exposing on a day-to-day basis has grown exponentially since XP's original release. The newer iterations of Microsoft's operating systems have obviously been built with that in mind," Williams says.

Williams says it would be naïve to think organizations will all be able to replace their WinXP systems right away, but they should be determining the best way to deploy a new operating system based on the hardware that currently exists or making a plan to upgrade to hardware that can support a new operating system.

*by Tessa Warner Breneman*

FEATURE PACKAGE

# Calculating Cloud ROI

## Determine If A Move To The Cloud Will Be Worth It In The Long Run

*by Holly Dolezalek*

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**You can't swing** a CAT 5 cable these days without hitting a cloud provider who says that you—yes, you!—can realize significant ROI by migrating to the cloud. And companies both small and large are saving money and avoiding future costs by running some of their functions on somebody else's hardware. But knowing that other organizations are running around with wads of newfound cash doesn't mean that you should run right out and start migrating everything to the cloud.

Instead, a careful ROI analysis will help you to figure out what, if anything, you should take to the cloud. Giving careful consideration to the following issues will help you to know exactly what you would spend, what you'll get for your budget dollars, and whether what you save will really justify the move.

### Key Points

- Start with questions about what the cloud provider will charge, whether it's a regular fee assessed monthly or quarterly or a usage fee based on transactions, users, or other measures.
- Continue with questions about what costs you can avoid by moving to the cloud: hardware costs, software costs, operational costs, and financial costs.
- Remember to consider exactly what the cloud provider is offering and to be sure that its SLA meets your needs for security, uptime, and other considerations.

### Sticker Price

Obviously, the first thing you have to ask is how much a cloud provider will charge you. Fortunately, this is often a straightforward cost; cloud providers tend to charge monthly, quarterly, or annual fees for as long as you have your application or applications in the cloud. Those fees may depend on your usage. For example, for ecommerce applications, the fees may be charged on a per-transaction basis. For others, the fee may depend on how many storage records you store or how many users you're managing.

"The cost is usually straightforward, and there aren't typically hidden costs," explains Alexander Pasik, CIO of the IEEE (Institute of Electrical and Electronics Engineers; www.ieee.org). But costs don't have to be hidden for you to fail to consider them. Part of your ROI analysis has to include whether you have sufficient bandwidth to handle accessing your application in the cloud; a higher cost for bandwidth has to go into your cost calculation.

You also have to take into account what kind of SLA you need from the cloud provider. If the application you're considering is business-critical, then you need a way to monitor and confirm the performance of that application in the cloud. That means an SLA with the uptime you need and a way to track application performance metrics. "In a shared cloud environment, you don't know what else is on the same server as your application," says Lynda Stadtmueller, senior research analyst for Stratecast, a division of Frost & Sullivan. "If other applications on the same server have peak times at the same time as yours, it might have an impact on performance. So you need to make sure you know how you're covered with SLAs and what kind of reporting or visibility they offer to see how applications are performing."

Finally, you have to consider security matters. Although many organizations worry about security in the cloud, the physical security that cloud providers can offer actually often exceeds what many SMEs can provide for themselves. But your specific needs for security may dictate higher costs. "Cloud providers can offer high levels of physical security, but it's usually up to the business to ensure that the application is protected from data loss or leakage, unauthorized access, denial of service, and other security issues," Stadtmueller says. "This can be done through the cloud provider, through separate software, or [via] separate managed security services."

### Saving Grace

The next question is: What's the cost of not going to the cloud? The draw of the cloud is everything that the provider does for you instead of doing it yourself. Aninda Bose, head of strategic marketing at NIIT Technologies (www.niit-tech.com), suggests several categories of costs that matter when they could be taken over by a cloud provider: hardware, software, licenses, any client software you have to have installed on desktops or PCs, and storage costs, to name a few. The operational cost of maintaining those things and the cost of capital to finance them has to be taken into account, as well. "Any IT professional can do a clean calculation of the cost of maintaining a present application in-house vs. moving it to the cloud," Bose says.

There are other costs you'll be avoiding, as well. Maintenance, incremental upgrades, and support are usually part of the cloud provider's package. And by definition, so are the power and cooling costs that your organization shoulders when the application is on-premises. If moving to the cloud means decommissioning or not having to buy a server, part of your savings will be the power, cooling, and other maintenance costs that you avoid.

Harder to quantify are headcount questions. Pasik notes that interest in moving to the cloud is often offset by concerns about what happens to existing IT staff. "If you can do a head count reduction, you do realize savings. But even if you don't, the savings are often still there in the long term because of the time liberated," he says. "The IT staff can be focused on other tasks that wouldn't have been done otherwise, and by moving to the cloud, you might actually be able to avoid a head count increase."

Even harder to quantify are missed opportunities. But you can consider what you would be able to do in the cloud that you can't in your own infrastructure. "Are you getting all you can in terms of sales, or do you have a large shopping cart abandon rate because the server doesn't serve up the application as quickly as need be?" says Stadtmueller. "A lot of small companies don't have the ability to measure that kind of thing, but it's a cost to them that could be mitigated with the right cloud provider."

In the end, you will come up with some figure of how much you'll save or avoid if you move something to the cloud. At that point, it's up to the organization to decide whether those savings are worth the effort of migrating. But Bose suggests a rule of thumb: "If [the savings are] less than 15%, the question probably needs a lot more discussion," he says. "If it's less than 10%, it probably doesn't make sense." P

## After ROI

Whether or not moving to the cloud has a positive financial ROI is a calculation that might be simple or might be complex. But considerations other than ROI can help you decide whether the cloud is right for you.

Alexander Pasik is the CIO of the IEEE (Institute of Electrical and Electronics Engineers; www.ieee.org). But before that, he was the CIO for the Guggenheim Museum in New York. "When I first joined the organization, there was no SaaS use at all," Pasik says. "By the time I left, about 70% of core applications were provided by third parties. And it wasn't just ROI that made the difference."

Moving to the cloud helped Pasik and his team to shift the priorities of IT from managing the infrastructure of an application to focusing on working more closely with business to identify better solutions for the organization. "The role of IT doesn't go away," he says. "It changes to figuring out how to leverage technology to improve the business and how to make IT more of a partner with the business, even if implementations of what they decide on aren't done internally."

# The Real Story Behind Storage Costs

## Shelling Out For Storage Requires More Than A Passing Glance At The Price Tag

*by Christian Perry*

• • •

**As hard drive costs continue** their plummet to all-time lows, buying more storage to solve capacity problems has become a common practice for many enterprises. Although the low upfront cost of drives and other storage hardware might seem insignificant in the big picture, hidden costs such as power, support, space, and maintenance can easily turn the tables on what initially seemed like a smart solution.

"These factors—operational expense over time—form the majority of cost of storage, as much as 70 to 80%, according to some analysts. Therefore, these elements are a very important factor. In fact, they should be given higher weight than cost of acquisition," says Rob Peglar, vice president of technology at Xiotech (www.xiotech.com).

### Cost Considerations

Although storage might boast fewer operational headaches than other technologies, make no mistake that you'll likely pay more for storage hardware than just its purchase cost. For example, Peglar explains that maintenance on storage arrays is notoriously expensive, leading smart IT managers to seek arrays with long warranties (such as five years) and low- or no-cost warranty service over that period and beyond. It's also critical to remember that these costs can vary widely among vendors.

"We recently went through an RFQ [request for quotation] for new storage arrays and sent the requirements out to three vendors," says Jason Burnett, director of network services at NeoSpire (www.neospire.net). "All three vendors came back within 10% of each other on price, but the support, maintenance options, and facility requirements—power and space—were so vastly different that we actually chose one of the more expensive manufacturers."

For production environments that require 100% availability, it's important to keep in mind that some storage array vendors offer only 24-hour turnaround on parts delivery and onsite technician assistance, Burnett warns. For his part, Burnett wasn't willing to accept the risk of maintaining large amounts of data that customers depend on around the clock. Instead, he seeks storage vendors that provide regional warehousing of parts and service and a four-hour turnaround for part replacement or onsite assistance.

Intel, which manages about 18PB of primary and backup storage in its design computing, office, and enterprise environments, looks at a wide range of factors when considering storage costs, including hardware, software, power, space, management, network, maintenance (including amount and frequency of failures), and four-year hardware maintenance and software licensing costs, says Shesha Krishnapura, senior principal engineer with Intel IT Engineering (www.intel.com).

After four years, new storage purchases can be more easily justified due to the higher maintenance costs stemming from expired vendor warranties, Krishnapura says. He adds that cooling and power do factor into Intel's total storage cost, but only at about 10%, and as the company refreshes with new technology, it benefits from more efficient power and space factors provided by those new technologies.

### Scrutinize The Storage

Gauging storage costs is a simple but crucial exercise, Peglar says, because the various hidden elements can greatly affect the overall costs. For managers entering a negotiation for storage acquisitions, he recommends insisting that the vendor provides a true five-year (or greater) cost of operation with all factors included, such as growth of capacity, growth of required performance (as application workloads grow and change), and all the required "inputs" (dollars, watts, BTUs, rackspace, support/service/maintenance costs, and any software licensing and software maintenance over time).

"Evaluation is a joint exercise between the [customer] and the supplier; it is the latter that best knows the detail of the true cost of operation. Consumers should insist on open and honest disclosure of all operational costs from their vendors, over at least five years," Peglar says.

When considering storage costs, it's also important to consider other wide-ranging concepts and strategies outside of the straight hardware infrastructure realm, adds Cindy LaChapelle, a lead consultant with Compass (www.compassmc.com). These include disaster recovery, business continuity, data management, data availability, lifecycle management, and data migration. Although other technologies might help to reduce storage costs, keep in mind that the actual savings and overall benefit to the business (in terms of storage) can be difficult to gauge.

"Emerging technologies like virtualization, deduplication, thin provisioning, etc., help optimize storage utilization, but the tools to measure real occupancy levels on shared storage systems are limited, so the effectiveness of these technologies in really optimizing the existing storage and aligning technology performance and capacity to the business needs is still relatively unproven," LaChapelle says.

### Key Points

- Storage costs can spiral well beyond the initial acquisition as power, support, space, and maintenance add significantly to the long-term bottom line.
- Notoriously high maintenance costs for storage arrays have led many IT managers to vigilantly seek long warranties and other service options that help justify the cost of hardware.
- When negotiating with storage vendors, it's crucial to obtain long-term estimations that provide an accurate glimpse of costs across all storage-related factors.

> "Consumers should insist on open and honest disclosure of all operational costs from their vendors, over at least five years."
>
> *- Xiotech's Rob Peglar*

### Size Does Matter

Plenty of unassuming costs can lurk behind any storage purchase, but perhaps the sneakiest cost is sizing. According to Shesha Krishnapura, senior principal engineer with Intel IT Engineering (www.intel.com), storage space often is allocated based on the entire lifetime of a project, but most of that storage won't be used in the initial stages of the project. In turn, valuable floor space can be occupied by arrays that sit relatively dormant until data begins to accumulate over the project's lifetime. To combat this problem, Krishnapura recommends allocating storage on an incremental basis to obtain both the new technology benefits (such as performance, power, and size) and the typical year-on-year hard drive cost reductions.

"One option is to use thin LUN [logical unit number] provisioning to provide better utilization of storage. Thin provisioning creates a common pool of storage by 'tricking' the system into thinking it has more physical capacity than it does, then manages the pool through automation. This helps reduce the overhead typically needed for provisioning tasks, while also allowing companies to purchase disk capacity over time vs. all upfront," Krishnapura says.

## StorageCraft ShadowProtect Server & ShadowProtect Small Business Server 4.0

NEW PRODUCT

*by Blaine Flamig*

### Fast Backups; Fast Recovery

**Picking up** the pieces after a server failure can be a major task for any business. StorageCraft knows as much. Beyond giving companies the means to reliably and quickly recover from server malfunctions to get back in business ASAP, StorageCraft ShadowProtect Server and ShadowProtect Small Business Server provide companies tools to protect their data and easily migrate systems when needed.

**StorageCraft ShadowProtect Server and ShadowProtect Small Business Server 4.0**

Provide scalable backup capabilities that are fast, reliable, and easily manageable.

Small Business Server 4.0: $495
ShadowProtect Server 4.0: $995
ShadowProtect Server 4.0 three-license pack: $2,835.75

"When we talk to IT managers, they consistently tell us what they want: backup that's fast, reliable, scalable, and that doesn't take a lot of resources to manage," says Brandon Nordquist, StorageCraft vice president of product management. "ShadowProtect Server gives them fast backup and fast disaster recovery, and it doesn't take hours and hours of training to learn how to use it. Plus new features like VirtualBoot help IT managers to boot ShadowProtect images as a virtual machine and have access to their data in two or three minutes, not hours."

VirtualBoot lets systems administrators boot any ShadowProtect backup image into a virtual machine using Sun VirtualBox. Further, ShadowProtect supports converting any ShadowProtect backup image into a virtual machine.

StorageCraft ShadowProtect supports selecting full bare-metal recovery of servers and granular recovery of files and folders, while Hardware Independent Restore technology makes recovering to the same system, different hardware, or to/from virtual environments quick and easy. For managing multiple servers, ShadowProtect includes a central management console from which administrators can push agents to multiple systems and group servers, import/export node data, and stay updated on the status of backups. An ImageManager feature supports verifying and re-verifying backup image files and consolidating those files to save storage space.

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News

### Workplace Social Networking Use On The Rise

Social networking activity in the workplace has increased to 24% of workers, according to a Trend Micro survey of 1,600 people. Respondents from Germany, Japan, the United Kingdom, and the United States were polled. Since the last time the poll was taken, social networking use at work is up 10% in Germany and 6% in the UK. The survey also showed that laptop users who can connect to the Internet outside of the company network are more inclined to share confidential data through email, messaging services, and social media apps. To protect against data leakage, the report suggests companies create detailed security policies rather than completely blocking social media sites.

### Smartphone Owners Don't Use Capabilities

A new report from Nielsen shows that almost one in four cell phone owners have a smartphone, and of those who do, 25% don't use the phone's advanced data capabilities. The firm also claims that a third of all smartphone owners—many of them early adopters—aren't paying for data services. The top 6% of smartphone users account for half of all data consumed. Since the beginning of 2009, average monthly data usage has ballooned by 230%. Despite the upward trend, however, Nielsen found that a limited data plan would save money for 99% of users.

### Google Market Share Drop Continues, Accelerates

Google is not only losing search engine market share to competitors Yahoo! and Microsoft, but the rate at which the company is losing its hold on the market continues to accelerate. A recent comScore analysis indicates that the company's overall share of the U.S. search engine market was 62.5% in June, compared to 65.1% in March. Overall, Google's share has dropped 1.1% since May. The company's chief competitors, meanwhile, saw their market share increase: Yahoo! by 0.6% to 18.9% total share and Microsoft's Bing by 0.6% to 12.7% total share. Google's overall 1.1% drop is the largest decline in the past four months.

### NTP Sues A Bevy Of Cell Phone Makers

Software developer NTP has filed suit against several top mobile phone manufacturers, alleging that the accused are guilty of infringing on patents NTP holds regarding the delivery of email over wireless communication systems. Among the defendants are Motorola, HTC, LG, and Google; NTP previously settled a similar case with BlackBerry maker RIM in 2006, with the small company earning more than $600 million in the settlement. NTP maintains that use of its patented technologies is unfair to the company; however, the company is quickly gaining a reputation as a "patent troll" that is unreasonably going after cell phone makers.

STORAGE

# Meet RTOs & RPOs

## Establish Reasonable Expectations & Plan For The Future

*by William Van Winkle*

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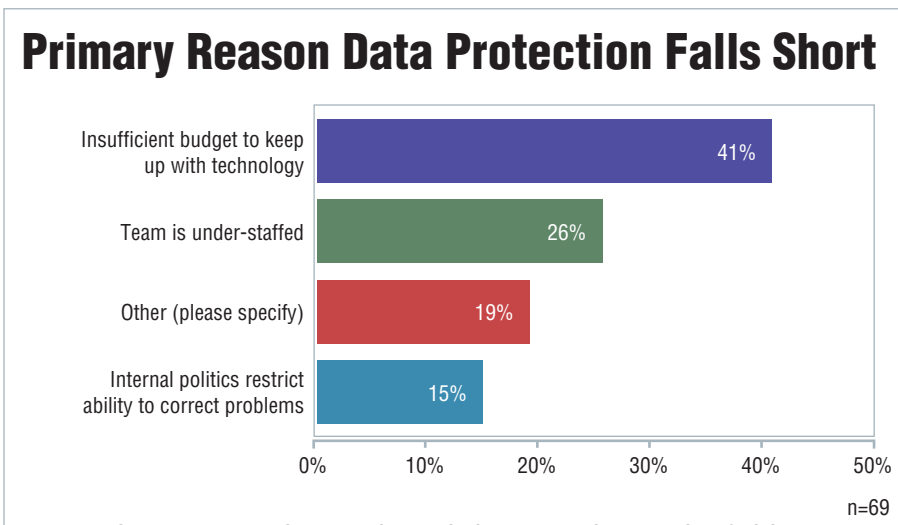
**THE SMARTEST WAY** to think about disaster is in terms of when, not if. The object of the game is to mitigate risk as much as is feasible, hope for the best, and prepare for the worst.

That's easier said than done. Enterprises are now faced with such explosive data growth that it's not uncommon for IT to complain that there aren't enough hours in the day to back up everything that must be replicated. This problem is compounded by business managers maintaining that there's no such thing as noncritical data—it's all critical and must be protected accordingly.

Obviously, having to safeguard everything magnifies the tasks of meeting RTOs (recovery time objectives) and RPOs (recovery point objectives). A company can't promise to be recovered from an outage in one hour if it has two hours of data transfer to bring back, and with more data to store, the prospect of keeping recovery point snapshots stretching back in time becomes ever more costly.

A recent survey from Sepaton (www.sepaton.com) titled "Enterprise Data Protection Priorities for 2010" shows that although disaster recovery is a key priority in the enterprise data center, 46% of respondents are not currently meeting their RTOs and RPOs in a consistent manner. Forty-three percent of respondents now require more than 24 hours to complete a backup, and those kinds of numbers aren't going to be sustainable for long.

"The reason that many companies aren't meeting their RTOs is because they are relying on tape backups for operational recovery," says Rachel Dines, infrastructure and operations analyst with Forrester Research. "Offsite vaulted tape can take 24 to 48 hours to recover, which isn't going to cut it for most enterprises these days. Most enterprises are measuring their RTO in hours, not days, for mission- and even business-critical applications. Adopting a disk-based backup solution can help improve RTO significantly."




**Sepaton's (www.sepaton.com) 2010 study reveals the reasons why enterprises feel they're unable to meet RTO and RPO goals, with insufficient budget and staffing topping the list.**

### (Re)Create A Plan

According to Jay Kramer, vice president of worldwide marketing for Sepaton, there are three points enterprise managers need to address when crafting an RTO/RPO strategy. First, they should take a fresh look at the technologies available for tackling recovery objectives, along with their on-going costs and ROI numbers. Second, managers need to define what exactly needs to be accomplished in recovery processes and design service-level objectives around those processes. Third, companies need a collection of best practices for optimizing performance and addressing incremental data changes.

"[Look] at things from a five-year TCO standpoint," suggests Kramer. "In that view, suddenly certain IT decisions will be different. For example, say you have a certain amount of data to back up and protect. Today, that fits in one appliance or solution. A year from now, the data you're backing up has doubled and you then need to either replace the box you have because it's full or you have to put a second box up—and maybe a third and a fourth. What are the costs to manage multiple boxes, both in administration and energy?"

Kramer suggests that organizations assess how much data needs to be protected today, weigh that against how storage and recovery needs have changed over the past few years, and use those numbers to project numbers five years into the future. That should be the basis for creating a realistic RTO/RPO strategy that allows for an acceptable amount of data loss, even if this might entail some manual re-entry. At some point, the cost of inputting data again becomes preferable to the towering expense of "perfect" downtime protection.

### Better Recovery Tech

If tape technology is a bottleneck to present RTO/RPO needs, then finding a better approach becomes imperative. One major game changer for storage is server virtualization and its ability to expedite server recovery.

"With server virtualization on your production systems and a good storage-area network in place, you can take snapshots of your virtual machines and mirror them over to a redundant facility where you don't need completely redundant infrastructure anymore," says James Quin, lead research analyst at Info-Tech Research Group. "It allows IT to build a more responsive, more recoverable infrastructure."

Part of this recoverable benefit stems from the fact that virtualization can be applied across multiple connected data centers, making them centrally managed and mutually redundant. This can drop recovery times to minutes or even less. Once multiple locations are virtualized together, organizations essentially have an "internal cloud" in operation.

"External cloud gets the greatest attention," says Sepaton's Kramer. "It's having some third-party organization take the burden of management off of an IT customer. Yet we're seeing much greater levels of adoption with internal clouds as a starting point."

Another key piece of technology often needed for more effective RTO/RPO is data deduplication, which keeps one instance of a chunk of data and replaces other instances of that chunk with a pointer back to the "master" copy. Thus an email sent to 50 employees and recorded on each of their systems would only need to be backed up once with pointers tagged to the other 49 instances. Depending on what kind of information a company stores, deduplication is often cited with being able to reduce needed disk capacity by 90% or more. Combined with incremental and/or differential backups, which only record files that have changed since the last backup or full backup, respectively, deduplication can yield very small backup times and greatly extend RPO windows.

### Managing Expectations

Once suitable technologies are on the table, Info-Tech's Quin emphasizes the need for business and IT groups to communicate thoroughly about RTO and RPO objectives. "Particularly in small/midsized businesses, they've never really thought about recovery objectives. So IT establishes RTOs and RPOs they can meet on their systems, but it's not in line with what business expects. And in a lot of cases, the business has really inappropriate expectations of recovery objectives. There will be a disconnect between these groups, and when that happens, there will be some horse trading."

Of course, once solutions are in place and both camps think their needs are being met, there comes the question of how to accurately tell if objectives are remaining realistic over time. Apart from measuring backup and restore operations with a stopwatch, managers should target solutions that lean heavily on metadata and incorporate reporting tools able to turn that metadata into practical information on whether the organization's SLAs are being met. If data growth, changing network topology, or other factors are impacting RTO/RPO objectives, reports should reveal this. P

### Key Points

- View RTO and RPO goals with five years' worth of future growth in mind. Solutions should be scalable enough to meet this horizon.
- Virtualization and deduplication technologies are two key enablers for improving RTO/RPO results.
- IT and business units must communicate to better understand each other's expectations and limitations and to arrive at feasible recovery objectives.

STORAGE

CASE STUDY

# Taming The Storage Beast

## Computer Forensics Provider Relies On BlueArc & Ocarina Networks' Storage Optimization To Handle Increasing Demand

*by Sue Hildreth*

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**THE DEMAND FOR DATA STORAGE** in today's SMEs is insatiable, and IT managers are faced with the challenge of not only keeping up with demand—which often requires throwing more drives into the mix—but also somehow managing it for greater cost efficiencies.

Optimization, deduplication, and compression are a few of the storage management technologies that will be key to squeezing a few extra terabytes from that petabyte storage solution and saving the cost of an upgrade. For organizations in industries that deal in large volumes of data, however, the challenge will continue to be how to organize and store information in a manner that is cost-effective and yet allows for timely access when needed.

At LDiscovery, a provider of e-discovery and computer forensics services to law firms and large corporations, the IT department has to ensure availability to more than 2PB of data for its clients. Law firms use LDiscovery to take and filter vast amounts of information, aggregate it and archive it, and then have it ready quickly if it's needed for a legal case. A complete set of files for one lawsuit might consume 10TB of data.

Because LDiscovery is a small and rapidly growing company, it can't afford to waste money through inefficiency, nor can the company afford to irritate its customers through excessive wait times for data retrieval. So when the storage needs of the company began to expand faster than the IT department could add more terabytes, Brian Wolfinger, LDiscovery's vice president of electronic discovery and forensics, began to look harder at optimization technologies.

### A Cost-Effective Combination

LDiscovery's storage architecture uses BlueArc Titan NAS storage with data distributed over two data centers. The BlueArc NAS handles the load from some 150 servers that do the work of indexing customer data and hosting the data for customers who access it through a BlueArc file system. Wolfinger was satisfied with the storage system but needed a way to slow the rapid growth in demand for storage. At the time, the company's online storage was at 150TB but was increasing quickly.

"Storage was just a matter of buying more when we needed it, and buying more and more and more," Wolfinger says.

To keep costs down, LDiscovery moved data that wasn't accessed often onto tapes for long-term storage, which was cheaper than maintaining the data on servers and disks but wasn't always convenient to the customers if one of them suddenly required fast access to that data. It could take a few hours for the LDiscovery staff to retrieve the tape and load the data onto the servers where the client could access it.

A potential solution to the problem arose unexpectedly one day when Wolfinger was on the phone with a BlueArc executive, who mentioned that his company was partnering with Ocarina Networks, a storage optimization technology provider (www.ocarinanetworks.com). The two companies were integrating Ocarina's ECOsystem storage optimization appliances with BlueArc's Intelligent Tiered Storage products. The combined system uses BlueArc's rules-based policy engine to manage data migration to and from BlueArc's storage and Ocarina's optimization appliances, which use file-specific compression and deduplication algorithms to reduce data substantially. The integration with Blue Arc also allows users to access the compressed data using BlueArc's file system interface, so the compression and decompression is transparent.

"We have incredible amounts of duplication in our stored data, just as a side effect of what we do. So [the ECOsystem technology] looked like it might be tailor-made for our business," Wolfinger says.

### Tight Integration & Implementation

Wolfinger considered both Ocarina and other deduplication options to help deal with the mass of identical or nearly identical images and documents that accumulate over time. In the end, he says he opted to go with Ocarina in large part because it was already well-integrated with the BlueArc systems his company already used. He was also impressed with the company's claims of an 80% optimization ratio. After deciding on Ocarina ECOsystem for BlueArc, Wolfinger then had to convince LDiscovery's owners that it would be a good investment.

"It was a little more money than what we might need to spend on storage right then, so I explained to the business partners how it will let us get more [storage space] out of every piece of storage we buy going forward," Wolfinger says. "What really closed the deal for us, though, was how tightly it integrates with BlueArc. Ocarina works with other platforms but requires an interpretation piece to translate the Ocarina data back and forth. With BlueArc, it's integrated, so we don't need to buy additional hardware to handle it."

LDiscovery bought two Ocarina ECOsystem appliances for its main headquarters in Tysons Corner, Va. Wolfinger calls the implementation "incredibly easy" with help from both BlueArc and Ocarina, both of which sent technicians to connect the appliances to LDiscovery's Fibre Channel SAN network. The units were configured to failover to each other, should one go down. Wolfinger says no changes were needed to any other existing systems. The bulk of the work was configuring the administrative interface, identifying the directories and files to optimize, and setting the parameters for when files should be sent to the lower-cost SATA storage drives for less frequent access.

### A Worthwhile Investment

LDiscovery's files were processed and migrated in phases, starting with files more than a year old and then gradually working toward newer ones, which let the company avoid the "massive crawl" that trying to optimize so much data at once would have created on the system.

Besides compressing files, the ECOsystem appliance also uses deduplication to remove redundant and identical documents and images and saves one copy that all files can share, which is a boon to a company dealing with multiple files that are nearly identical.

"We see this a lot with graphics files, such as TIFFs. For e-discovery, documents are rendered as .TIF images, so they can be redacted and branded or overlaid, such as with the case name or with 'confidential,'" Wolfinger explains. "If you have two TIFF files of the same document on two computers but one has a single pixel just a shade different, then it's possible it won't be recognized as the same file when you're doing deduplication. But Ocarina has been able to recognize them so far."

Clients accessing the files use the same interface and file system regardless of whether the data has been put through the ECOsystem appliance. The only real sign that a file has been compressed is a small icon by the file and, if it's a large file, a few seconds of lag time before it opens. "It might take a couple of seconds. I'd be shocked if any file took longer than a minute to be retrieved, and we have some monstrous files," says Wolfinger.

The company has experienced a storage savings of about 80%, according to Wolfinger, with a compression ratio of about 79%. With two Ocarina ECOsystem devices working well at its main data center in Tysons Corner, Wolfinger expects to add others at its offices in Philadelphia and New York.

The investment is paying off in a very tangible way, he says, by enabling the company to buy less storage and, with its quick rehydration of archived files and easy access interface, enabling them to keep more files on cheaper SATA storage and less on higher-priced Fibre Channel SANs. At about $1,500 to $2,000 per terabyte saved, Wolfinger expects the savings could easily top half a million dollars.

"The investment paid off in three months of deployment vs. the space we'd have to purchase if it hadn't gotten it," Wolfinger says. P

### Ocarina Networks ECOsystem Storage Optimization For BlueArc NAS

Content-aware storage optimization device that reduces the size of files through compression and deduplication. BlueArc's intelligent rules-based management lets data center managers configure policies for processing files through ECOsystem and migrate them to different storage tiers.

"We have incredible amounts of duplication in our stored data, just as a side effect of what we do. So [the ECOsystem technology] looked like it might be tailor-made for our business," says Brian Wolfinger, vice president of electronic discovery and forensics at LDiscovery.

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## News

### New HIPAA Rules Could Bolster Privacy

The Department of Health and Human Services has proposed several new regulations to help private citizens vis-à-vis electronic medical record privacy and access. "One of the Department's guiding principles is that the benefits of health IT can only be fully realized if patients and providers are confident that electronic health information is kept private and secure," the department said in a statement. HHS is now taking public comments on the proposed rules, which would empower individuals with greater access to their medical records, prohibit sale of patient health information without permission, curtail marketing use of said data, and more.

### Intel Reports $2.9 Billion Profit

Intel, the world's largest computer chipmaker, reported the best quarter in its 42-year history, earning $2.9 billion, or 51 cents a share. The profit comes in contrast to the $398 million loss, or 7 cents per share, recorded during the same quarter last year. The increase in profits resulted from higher demand for servers and personal computers. The desire of corporations to replace old systems and add new ones to prepare for cloud computing and other new technologies also impacted the increase. Intel anticipates additional growth for the current quarter, predicting revenue at $11.2 billion to $12 billion, compared to the $10.8 billion in revenue last quarter.

### China Renews Google License

Chinese officials agreed to renew Google's license to operate its Web site in mainland China after Google agreed to stop automatically directing Chinese users to its Hong Kong-based site. In January, Google said it would stop censoring its search results in China after a series of online attacks originating in the country. The search giant began redirecting its Chinese users to its unfiltered site in Hong Kong, which is governed separately from mainland China. Chinese officials threatened to deny Google's operating license if it maintained that practice, however. Now, instead of automatically directing users to the Hong Kong site, Google has posted a link to that site on Google.cn.

### *Fortune* Names Top 50 In Tech

Who is the smartest person within the technology sector? According to *Fortune*, the list includes the likes of Apple's Steve Jobs (CEO), Apple's Jonathan Ive (designer), Morgan Stanley's Mary Meeker (analyst), Facebook's Mark Zuckerberg (founder), Cloudera's Christophe Bisciglia (engineer), Microsoft Research's Danah Boyd (academics), "Avatar" director James Cameron (hybrid), Accel Partners' Jim Breyer (investor), IBM's Robert Morris (scientist), and HP's Todd Bradley (executive). In compiling the list, *Fortune* says it saluted intelligence "but also impact," noting that it was "most concerned with the present." Thus, the likes of Bill Gates don't show up on the list. Explaining that the list is not a ranking of IQ, *Fortune* says, "In the ecosystem that leads to commercializing technological advances, thoughtful business executives are just as important as engineering geniuses."

News

## Businesses Ramp Up Information Protection

Small and medium-sized companies are giving much more attention to and putting more effort toward protecting their companies' sensitive data than they were a year ago, according to a recent report released by Symantec.

The report, the "2010 Global SMB Information Protection Survey," was based on a survey of 2,152 owners, managers, and computer staff workers at SMBs with between 10 and 499 employees in 28 countries.

"The biggest and most positive finding from the survey is that SMBs are definitely beginning to take information protection seriously," says Bernard Laroche, senior director of SMB product marketing for Symantec. The study found that businesses are spending more than half of IT staff's time and $51,000 annually on information protection. "We found that SMBs are now focusing more on security, backup, and recovery as well as disaster recovery readiness," Laroche says. That's a far cry from last year, when, according to Laroche, Symantec conducted an SMB Security and Storage survey and found that most SMBs lacked basic protection on their devices.

### Information Loss

The newest study also focused on the information loss that many SMBs experience. Of the survey respondents, 42% say they have lost confidential or proprietary information in the past, and in all cases, those companies that lost sensitive information faced a loss in revenue. In addition, 62% of respondents say they've lost at least one device in the past year, and many of the lost devices had no password protection. As a result, Laroche says, about 75% of SMBs are now very concerned about the loss of critical business information.

Based on the survey's results, Symantec offers several recommendations for SMBs. "There are several things that SMBs can do to protect their critical information," Laroche says. For starters, SMBs should be educating their employees about Internet safety, security, and potential threats. Businesses should pay special attention to educating their employees about the importance of frequently changing passwords, especially on mobile devices.

Laroche says SMBs should also be implementing plans to keep their confidential information safe and for creating effective backup and recovery procedures. Last but not least, he says, SMBs should look for a Web security solution that helps decrease spam and email threats.

*by Kris Glaser Brambila*

SECURITY

# Set Up Effective Security Group Policies

## Control The Keys To The Enterprise Kingdom

*by Chris A. MacKinnon*

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**IMAGINE WHAT WOULD ENSUE** if your users had full control of everything on the network. Thanks to security group policies, we can only imagine this scenario. When it comes to network updates or changes and allowing rights to certain employees or groups of employees, security group policies save the day. But a good security group policy is only effective when you determine which employees or groups of employees need rights and which don't. Being aware of potential data loss issues is also key to an effective security group policy. IT and data center managers need to ensure their policies aren't so restrictive that administrators and others can't get work done. So how can worst-case scenarios be contained to imagination only?

Frank Cabri, vice president of marketing at Centrify (www.centrify.com), says by using group policies, you meet a core tenet of good security and good business operations—standardization. Cabri comments, "By assigning responsibilities and access to a group, you avoid the vulnerability that is associated with custom security per individual. After all, if each person was treated uniquely, the person doing the assigning might also be the person being authorized. By standardizing on a centralized administrative environment, you also avoid the inefficiency and cost associated with unique enforcement of each individual."

Cabri says by grouping roles and assigning individuals to those groups, you have stronger security at a lower cost. He says a solid, centralized security model should also allow for exceptions to the standard policy, as needed.

### Know Your Rights

According to Manny Vellon, chief technology officer with Likewise (www.likewise.com), it's not easy to determine which employees or groups of employees need rights and which ones don't. "There is no single blueprint that works for every organization," Vellon says. "We recommend a two-pronged approach. First, develop a plan based on your current understanding of your systems. Second, make sure that you establish processes that keep track of subsequent requests for specific rights and to try to establish patterns based on their requests."

David J. Lineman, president of Information Shield (www.informationshield.com), says a good approach to determining employee rights is to tie information security-related job functions to organizational roles and document them in job descriptions. Lineman explains, "This approach requires management to think through the process of which employees must have access to data to perform their jobs and to identify roles that may not need access to any sensitive information. Another good approach is to have formal policies that require management approval before employees are provisioned into systems and applications." Lineman says this requires an explicit management decision and also creates an audit trail of the approval process.

### Key Points

- It's not easy to determine which employees or groups of employees need rights and which ones don't. There is no single blueprint that works for every organization.
- The purpose of access control policies and enforcing group policies is to reduce the risk of data loss.
- Organizations should involve their employees in helping to define and establish group policies and to educate and train all other employees.

### Keep Your Data

Where there are poor security policies, there's always a chance of data loss. Centrify's Cabri says stopping loss from internal systems starts with managing and securing access. He says physical isolation is less viable in the contemporary data center—"connection is value." He adds, "Presuming the systems can communicate, the rigid authentication and access control of directory services such as Active Directory with its integrated Kerberos support can include a cross-platform environment, which eliminates the security vulnerabilities that accompany silos of identity. Securing data no longer means that you have to be constrained to a particular platform or have to use expensive or suboptimal systems in order to secure them."

In Cabri's opinion, the purpose of access controls policies and enforcement through group policy is to reduce the risk of data loss. He says if an organization does experience a breach, it will be much less likely to be found negligent if it has established and documented access control policies. Vellon says with Sarbox, it is important to be aware of the legal and business consequences of poor security practices. He says with PCI, a security lapse or audit failure can cost an organization millions of dollars in higher transaction fees.

### Loosen The Reins

So how do you ensure your policies aren't too restrictive? Likewise's Vellon responds, "Monitor your processes for requesting and granting added privileges. If your administrators constantly have to request additional privileges, your policies may be too strict. Also, keep track of administrator and root account activity. If users have to log in with privileged accounts, this is a sign that your security policies may be too onerous."

Information Shield's Lineman says it's important to tie your policies to organizational roles. "Administrators obviously need more advanced privileges than typical users to be effective in their jobs," he says. "However, you also need to establish logging policies so that security-related events generated by admin action are properly recorded."

Although a huge portion of access control and privilege management is simply preventing access altogether, security applications today are often sophisticated enough to manage granularity of access, within the framework of group authorization, Cabri says. "An essential requirement is that every actor on a system can be identified by name. No 'admin,' no 'root,' no 'manager' should have access. Providing individuals with super user access and making that access anonymous is not in the best interest of the organization. They may be members of groups with those names, but when they touch a system, they should do so by name."

Cabri says that after you establish that only named users can access a system, you still need to audit their activity. "You can't manage what you can't measure. Auditing and enforcement go hand in hand," he notes.

"The bottom line," Cabri says, "is security policies are encoded in regulations, best practices, and business policies (the more specific the better) to serve the organization and its constituents. Most industry regulations and best practices insist on absolutes and specify standardization for certain rules. For instance: All administrators must have unique identities, even when they access root accounts. All activity on certain financial or credit card systems must be monitored. All traffic to and from a certain class of servers must be encrypted. These rules and definitions establish what it means to be secure. Of course, simply invoking policies on the network isn't enough."

Most organizations involve the employees in helping to define and establish the policies and to educate and train all other employees, says Cabri. He concludes, "If they know the motivation and benefit of a given policy, employees can actually become big advocates and help evangelize it. That makes everyone's job easier." P

## Record Everything

In the same way that dealers in casinos are accustomed to being monitored with a camera over their shoulders, there are applications today that will record an administrator's session and play back every keystroke and system response. And it serves the IT administrator well, according to Frank Cabri, vice president of marketing at Centrify (www.centrify.com). Cabri notes, "The IT administrator can eagerly assert that he did nothing wrong, 'Look at the tapes!' Some regulations, particularly those of the PCI (payment card industry), require that the organization must be able to report on every administrative action taken on a system that holds customers' credit card numbers, no matter how fleetingly."

SECURITY

FEATURED PRODUCT

# Intelligent Web Filtering

## FutureSoft's DynaComm i:filter Efficiently & Effectively Monitors Online Activity

*by Robyn Weisman*

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**HOUSTON, TEXAS,-BASED NETWORKING** and security solutions provider FutureSoft understood the importance of filtering network traffic back when SME IT departments had their hands full with the Anna Kournikova virus back in 2001. The company's DynaComm i:filter product has been so successful in monitoring online activity that Microsoft bought the technology from the company in 2006 to incorporate it into its Threat Management Gateway offering.

However, FutureSoft (www.futuresoft.com) retained the rights both to upgrade and modify i:filter and to sell it as a standalone product, says Tim Farrell, CEO of FutureSoft. "We provide and maintain the data stream that is being fed to Microsoft. We are their verification arm for guaranteeing a Web site's validity," he says.

### Don't Forget The Human Element

Unlike other security providers that bundle Web filtering as a module of an all-in-one solution, i:filter focuses solely on monitoring traffic. "I'm a firm believer that you need to watch Web sites to keep your people away from the bad things they're not going to tell you about. How many employees are going to tell you that their machine got infected because they were surfing porn?" Farrell points out.

FutureSoft does not rely solely on automated Web filtering techniques to determine if a Web site is malicious. FutureSoft engineers also perform physical reviews of Web sites. "Other [filtering solutions] will take a violin company and rate it as [a site that sells] weapons because of the bows being sold with the violins. So there has to be an element of human review, or there's no way you can guarantee what a site is," explains Farrell.

Each month, Microsoft forwards a large volume of high-value targets that FutureSoft engineers validate physically and then rate and classify across Microsoft's large group of categories. Farrell says i:filter's database contains high-value targets that enable i:filter to provide efficient monitoring and protection from online threats without creating a choke point that slows down your entire network. "You might have 300 million Web pages in your database, but if out of those 300 million, nobody goes to 80% of them, will that keep you safe? Heck, no. But Microsoft has the largest server farm on the planet and more data than anybody else can throw at you," Farrell says. "It gives us an insight that makes us unique."

### Providing Granularity

The importance of monitoring Internet traffic has become important from a legal and productivity standpoint. An employee who spends a portion of his workday surfing inappropriate Web sites is obviously cutting into his productivity; however, some inappropriate surfing can leave organizations legally liable. Yet many filtering modules that are part of larger intrusion prevention solutions fail to provide users with the ability to suss out who is going to a banned Web site, let alone provide the rules to block access to certain Web sites by category or individual.

Fortunately, enterprises don't have to upend their intrusion prevention or other security architectures in order to use i:filter. "You can keep the rest of what [your solution is] doing and use our filtering because integration is not an issue. We're just doing the filtering component," says Farrell.

i:filter's granularity is evident in its feature set. Its new password override feature enables data center managers to create policies that enable them to access Web sites that are normally blocked so that they may access sites from any computer for research and support purposes on the fly.

In addition, i:filter offers 50 predefined reports as well as the ability to customize those reports so that administrators can drill down to whatever detail they need. "We've created them so that they're simple enough to modify but automated so that an administrator can set them up once, schedule them, and they run," says Farrell. "You can set it up so that every night, i:filter collects and processes data about users who are attempting to hit sites they shouldn't be accessing and notifies managers in a department about it. If [a manager] has a problem, he can have i:filter create an ad-hoc report about an employee to see what [he or she] is doing in detail."

### Improved Architecture

In October, FutureSoft released version 7.0 of i:filter with an architecture that offers improved performance and better security. According to Farrell, FutureSoft migrated to an architecture that lets administrators manage the dashboard using Windows Presentation Services, which takes up little space. This highly distributed architecture allows for increased security and remote management through port 80.

This new version also lets administrators manage 2,000 users on a low-end Windows Home Server box. "Because the code is so efficient, it doesn't require a lot of resources," says Farrell. "And because we're distributed, if you're a large-scale customer with 100 stores across the country, you can pop a little module into each store and monitor it from headquarters without requiring an expensive box," he adds.

FutureSoft will soon be releasing an incremental upgrade of i:filter that will be free to current users. The new version will provide additional data and double its current category count that will add malicious content categories and broaden other data categories and introduce SafeSearch functionality, as well.

DynaComm i:filter tracks blocked and monitored Web traffic through an easy-to-read interface.

### FUTURESOFT DYNACOMM I:FILTER

**(800) 989-8908**
**www.futuresoft.com**

- **Description:** Robust client-server Internet filtering software that secures, manages, and monitors online traffic to maintain compliance, minimize exposure to legal liability, conserve IT resources, and increase employee productivity. Works only with Microsoft Windows operating systems.
- **Interesting Fact:** DynaComm i:filter provides roaming users with the same level of protection as static users, allowing admins to enforce acceptable use policies even when employees are on the road.

FEATURED PRODUCT

# Next-Generation Firewalls Protect Your Data

## Palo Alto Networks Redefines Network Security

*by Tessa Warner Breneman*

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**PALO ALTO NETWORKS** has developed next-generation firewall technology that enhances your protection against evolving threats targeting your users and data. These firewalls identify applications regardless of the port, protocol, and SSL encryption, and they let you control access to Web 2.0 and other applications based on user identities rather than IP addresses. This helps keep your network and your data safe from increasingly sophisticated cyber criminal activity.

Firewalls from Palo Alto Networks offer enhanced network security through the company's App-ID, User-ID, and Content-ID technologies to deliver unparalleled visibility and control so security personnel can selectively allow business productivity applications on the network while blocking harmful or unnecessary application traffic. The firewalls can also scan applications for threats, removing the need for a standalone IPS product.

Palo Alto's next-gen firewalls are also equipped to handle heavy network traffic flows with dedicated processing and memory for the data and control planes.

The PA-2000 Series includes the PA-2050 and the PA-2020 for medium-sized enterprises and large branch offices. The PA-2050 offers 1Gbps firewall throughput, 500Mbps threat prevention throughput, and 300Mbps IPsec VPN throughput. The PA-2020 provides 500Mbps firewall throughput, 200Mbps threat prevention throughput, and 200Mbps IPsec VPN throughput. Both models support 15,000 new sessions per second. The PA-2020 can support up to 125,000 sessions, while the PA-2050 tops out at 250,000 sessions.

Midsized enterprises or branch offices can also use the PA-500 firewall to protect their networks. It features 250Mbps firewall throughput, 100Mbps threat prevention throughput, and 50Mbps IPsec VPN throughput. It offers 7,500 new sessions per second and up to 64,000 sessions.

With Palo Alto's next-gen firewalls, you can be sure that your network and data are safe from malicious applications and prevent inadvertent data leakage by your users.

### PALO ALTO NETWORKS PA-500, PA-2020 & PA-2050 FIREWALLS

**(301) 346-7256**
**www.sunmanagement.net**

Next-gen firewalls use Palo Alto Networks' sophisticated technology to secure networks and prevent threats, even in high-traffic situations.

News

## Group Issues Federal Cybersecurity Guidelines

The National Institute of Standards and Technology released a revision of some of its guidelines regarding the implementation of cybersecurity measures for organizations. In its report, the NIST simplified parts of the guidelines in an effort to help organizations have more flexibility in what types of measures they implement and how. The Information Technology Laboratory at the NIST drives this series of publications, which are based on its research, outreach, and collaborations.

## Finjan Sues Rivals

Security software company Finjan Software is suing industry competitors McAfee, Symantec, Webroot, Websense, and Sophos for patent infringement in their antivirus and security products. In 2008, Finjan successfully sued Secure Computing, which is now part of McAfee, for patent infringement and won a $13.8 million judgment. This current lawsuit includes patents covering network-based virus protection and protecting users from hostile downloads. Finjan is seeking monetary damages and an injunction to block sales of certain products from the named companies.

## Site Ranks Jobs With Most Difficult IT Skill Sets To Fill

IT jobs requiring Java/J2EE skills are the most difficult to recruit for and fill, according to a survey by Dice.com. The site notes that it has more than 14,000 job postings requesting Java/J2EE skills, and there simply aren't enough developers on the market. Jobs requiring security skill sets took second place in the survey, followed by software developer, SAP, database administrator, .NET, Oracle, SharePoint, C#, and active federal government security clearance. Dice.com reports that professionals in these skill groups often earn $10,000 more than the average tech professional. In a monthly report, Dice.com Senior Vice President Tom Silver says that, in order to fill these positions, "companies will have to reconsider how they recruit and build long-term relationships with those technology professionals that have hard-to-find skills."

## Firewall Market Set For Growth

Although the market for firewall products has been slowing in recent years because of market saturation and mature technologies, according to research group Frost & Sullivan, it's set for growth as vendors improve their offerings. Frost & Sullivan expects the firewall market to grow from $2.95 billion in revenues in 2009 to $4.63 billion by 2016. In his report, Frost & Sullivan research analyst Chris Rodriguez says, "The firewall initially underwent much change and innovation, with multiple product methodologies developed in a short span of a few years. Since then, vendors have introduced new features, but customers have essentially been using inspection firewalls for over a decade." The report notes that new capabilities such as application- and identity-based filtering will drive demand for newer firewall products.

## IBM Sees Revenue, Earnings Growth In Q2

IBM reported revenue of $23.7 billion during its second fiscal quarter, which fell short of Wall Street estimates but was a 2% increase from the $23.3 billion the company reported during the same quarter last year. IBM also posted an earnings increase of almost 13% during the quarter, and net income rose 9.1% to $3.4 billion. Hardware sales from the company's Systems and Technology group grew 3.5% to $4 billion, and sales from its Global Technology Services group rose 1.4% to $9.2 billion. IBM says it expects continued growth for the rest of the year.

SECURITY

FEATURED COMPANY

# Device-Based User Identification

## Uniloc & BlueCava Help Companies Protect Their Data By Blocking Nefarious Users' Devices

*by Holly Dolezalek*

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**THERE ARE MANY** unpleasant things about hackers—their ability to create malicious software, their willingness to use their powers for evil instead of good. But often, their worst quality is their relentlessness.

By spamming your environment with hundreds or even thousands of falsified IDs, hackers and other fraudsters can do a lot of damage—and often get what they want, despite your best security efforts.

Recognizing this, Uniloc (www.uniloc.com) has taken a method it devised for protecting music to cut hackers down to size. Uniloc's business is device-based identification of network computers, including PCs, laptops, smartphones, and netbooks. Its claim to fame is its EdgeID platform, which allows users to designate certain devices as authorized to connect to a network. Rather than using certificates or user identification, the software identifies users based on the hardware they're using and whitelists those devices. Once a user behaves suspiciously or is confirmed to be fraudulent, that user's machine can be blacklisted.

"Our technology fingerprints the machine so that if that machine is used for fraudulent activity, the software blacklists it and blocks all other transactions from that machine," says David Norris, former president of Uniloc and current CEO of BlueCava (www.bluecava.com), which is a spinoff of Uniloc USA. "It's easy to create a new ID but not so easy to get a new laptop every time you get blocked."

Norris notes that particularly with cloud computing, security becomes a higher priority, and the cost of managing that security can be a big issue. "If you've got 10,000 employees, that's 10,000 digital certificates, and over time, they expire and have to be updated," he says. "And when you're moving to cloud computing, a lot of those cloud computers are using the VPN to get in, and now you're talking about millions of certificates. But with the EdgeID platform, you use the computer itself as the certificate."

### From Music To The Cloud

Founded in 2003 and based in Irvine, Calif., Uniloc has fewer than 100 employees, the highest concentration of whom—such as the executive team and the engineering department—work in the company's headquarters. But Uniloc also has offices in New York City, Philadelphia, Chicago, Dallas, and the Bay area.

Uniloc Australia is actually the company's parent company, so up until recently, Uniloc USA was its name. The two companies more or less operate as one, although Uniloc USA recently changed its name to BlueCava and spun off as a separate company.

Uniloc's typical customer is the large enterprise, Norris explains, and the company does well in financial companies such as large banks or processing companies. The company has had some success in health care, as well, although it isn't one of its biggest segments; government business is similarly less extensive.

More than half—about 60%—of the company's business comes from direct sales. The remaining 40% comes from Uniloc's other channels, which include partners, which build their own technology on top of the EdgeID platform, and OEMs, which embed EdgeID in their own applications.

Uniloc's business is still heavily concentrated in North America, with 80% of its sales coming from that region and the remaining 20% overseas. But Norris notes that that's going to change soon and that, particularly in 2011, the company will have a significant expansion in the international market, particularly Europe. "We already have a presence in 69 countries, and in the next 24 months, we expect that 80/20 split to get closer to 50/50," Norris explains. "We're opening a lot of offices internationally and seeding especially the European and Asian market."

### UNILOC & BLUECAVA

- Uniloc and its spinoff company BlueCava identify malicious users by their devices, allowing customers to blacklist specific devices and therefore prevent malicious users from making repeat attacks from the same devices under different identities.
- Uniloc and BlueCava serve a variety of market segments, including financial industries and health care.
- "We're not just building a business—we want to make significant change in the industry around the role that devices can play in fighting fraud," says David Norris, former president of Uniloc and current CEO of BlueCava.

### Introducing BlueCava

Uniloc's new spinoff, BlueCava, will continue to distribute EdgeID, and Norris explains that BlueCava is only the first of what is likely to be quite a few spinoffs based on technology that Uniloc has already developed. He compares Uniloc to a think tank, where ideas and innovation are the core function, rather than marketing. "Uniloc has about 100 patents, some of which have been issued and some of which are still pending," Norris says. "Going forward, the purpose of Uniloc will be the innovation and creation of intellectual property, and rather than take those technologies to market, the company will simply spin off more companies like BlueCava."

BlueCava is planning to launch a new product in the third quarter of this year that Norris thinks will be a game-changer in the industry. "We think it will cause a lot of discussion," he says. "That's good, because we're not just building a business—we want to make significant change in the industry around the role that devices can play in fighting fraud." P

## Uniloc EdgeID Device Identification

EdgeID is a device identification platform that classifies users by the devices they're on and grants them access to networks and online applications based on those devices, rather than using a certificate to verify identification. The software blacklists any device that engages in fraudulent activity so that fraudulent users can't keep creating new false IDs to continue attacking the network or application. EdgeID works with three different software packages to meet customers' needs; here is a look at the available options.

**NetAnchor**
- NetAnchor protects critical infrastructure and related networks in industries where security is paramount, such as power generation, power transmission and distribution, water and wastewater, oil and gas, chemical, transportation, and traffic management.

**SoftAnchor**
- Designed for copy protection, license management, and game anti-piracy, SoftAnchor uses encryption, obfuscation, trip wires, and other devices to protect data and includes capabilities for reports on licenses, product usage, compliance, and hardware profiles.

**WebAnchor**
- This package offers functions similar to SoftAnchor for online services, providing authentication and authorized access for online applications and databases.

# Move Enterprise Email To The Cloud

## Develop A Plan Before You Migrate To A Cloud Provider

*by Elizabeth Millard*

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**"CLOUD COMPUTING SIGNIFIES IT'S** ongoing transformation to a true services management model where internal infrastructure and external services are sourced, bundled, and delivered in a manner that reduces costs, speeds up innovation, and grows the bottom line," notes Steve Crawford, vice president of marketing and business development at Jamcracker (www.jamcracker.com), a provider that unifies cloud services.

As part of this evolution, email logically seems the next in line to be cloud-bound, but considering its importance to the organization, it's important to first weigh the benefits and pitfalls and have a clear strategy in place before making the move.

### Creating A Plan

"Email is particularly well-suited as a solution that can be migrated from an on-premises solution to a cloud-based counterpart, offering similar if not better functionality and performance and enabling IT organizations to free up resources to focus on mission-critical applications and infrastructure that absolutely need to be managed internally," Crawford says.

This type of cost is a major consideration, as most IT departments spend at least half their budget on salaries, and up to 70% of IT staff time is spent on maintenance of systems such as email, according to Nick Mehta, CEO of LiveOffice (www.liveoffice.com), a firm that provides email archiving and other email services.

Crawford adds that email is just one of many enterprise services that IT will migrate to a public cloud delivery model, so a key consideration is to ensure the organization has a game plan for how it will ultimately tie together disparate public and private cloud services into a unified services delivery and management framework.

Part of that plan will involve taking a deeper look at how operations and usability will be affected. Crawford believes that cloud-based solutions, in general, will have fewer customization capabilities than their on-premises equivalents.

He says, "Part of the evaluation process should be to consider what customizations have been done internally and whether the cloud-based alternative offers equivalent capabilities. Also, determine whether these customizations are truly needed by internal users."

Data center managers should understand the rationale for moving to the cloud, he adds. For example, lowered costs might be a major driver, or an enterprise might find that future organizational needs could be better met with a cloud-based service. "For example, highly distributed organizations will benefit from cloud-based solutions if they can better service remote users and reduce the need for IT support."

In general, an IT manager should evalu-ate the many cloud-based email solutions that are on the market and then talk to cloud providers about issues that may have cropped up with those specific applications. When forming a plan, it may also be useful to chat with other SME data center managers who've made the switch to see what type of stumbling blocks they might have encountered.

### Migration Types

There are several different types of migration strategies, and an enterprise should choose one based on whether it's preferable to migrate everyone at once or in phases, according to Mehta.

A few different approaches include "Greenfield migration," which allows an enterprise to simply provision users and move everyone at once. In this scenario, it's easy to move a large group, but because there's no retention of legacy mailbox data, employees might be affected by the loss of old messages.

There's also "end-user migration," which provisions users and provides them with migration tools, so they can bring over the legacy email on their own. For this strategy, employees would have to be trained on using the tools or guided through the process.

"Minimal migration" can provision users and migrate only core content such as calendars and contact lists, which may work as long as employees don't mind some missing data such as older mailboxes.

In a "classic migration," the admin migrates groups of users, and this multistep process can preserve most email content. It's also easier for supporting large-scale migrations because any problems can be handled on a smaller scale rather than for the entire enterprise email system at once. However, the strategy does require more admin work to coordinate the moves, Mehta adds.

He notes that if there's a great deal of legacy data to import, an archiving solution may be particularly useful. It can be a strong first step in preparing for an email system upgrade or migration, because it allows companies to copy and secure messages and attachments in a way that's searchable. Mehta recommends implementing an archiving solution with a cloud provider before the email migration, in order to free up internal resources for planning and executing the upgrade.

Another factor to keep in mind when setting up any system is data recovery from the cloud. Because so much IT troubleshooting can center on email, such as employees accidentally deleting important messages or spreading viruses via questionable applications, it's vital to establish a data recovery model for cloud-based email before the system goes live.

Charles Buck, chief operating officer at infrastructure management firm Independence IT (www.independenceit.com), notes that IT managers should check with cloud providers about issues such as redundancy, protection against data loss, and data restoration. From there, a process chart can be developed that follows the data management path through its entire life cycle and includes restoration if necessary.

By evaluating all of the components involved in an email migration, an enterprise can fully harness the power of the cloud, Crawford notes. "The cloud is helping define a vision for how enterprise IT can better meet the needs of their organizations." P

### Key Points

- The first step in moving an enterprise to cloud-based email is determining whether it makes sense for the organization, based on factors such as compliance, data recovery options, customization needs, and cost.
- Begin developing a game plan by first taking a look at how usability and operations will be affected and how support will be delivered; also important is establishing a rationale for the move, as this is what will be communicated to the CFO and CEO.
- Determine the type of migration that might be the best fit for your organization, such as classic migration, quick migration, etc.

### TOP TIPS

- Review the cloud provider's SLAs to ensure they meet or exceed your organization's requirements.
- Consider how email archiving will come into play, and talk to providers about topics such as built-in email continuity, email policy enforcement, e-discovery, and mailbox management. This is also vital if there's a potential for moving from one cloud email provider to another, so business continuity won't be affected during the switch.
- Support escalation should be mapped out in advance between the internal help desk and the provider.
- Determine whether the enterprise needs only an email solution or unified communications. The latter can offer a variety of services such as videoconferencing, unified messaging, file sharing, online whiteboarding, and other functions, but sometimes may be overkill for a workforce that wouldn't use all the tools.
- Corporate governance and regulatory compliance policies should be evaluated in the context of any cloud-based solution. Most compliance requirements don't dictate whether data is stored on-premises or in the cloud, but there are considerations when it comes to audit capabilities that govern authentication, authorization, and access control.

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News

## Cuts To Security Budgets Leave SMEs Vulnerable To Complex Threats

The downturn in the economy could have a major impact on the security of enterprises, according to a new study from NetForensics. "The CIOs, CSOs, and directors of IT that responded identified that that they did not, on the whole, feel that they were adequately protected based on what the company was spending on security," says Tracy Hulver, executive vice president of products and marketing at NetForensics.

Of those surveyed, 85% believe that their organization's security environment will become more complex over the next two years because of increased security threats. Worse, 53% said their organization is not budgeting enough money toward security to manage the threats. "The amount of personally identifiable data that's being kept or transferred electronically has been growing exponentially over the last six or seven years, and when you add in that the data must be highly regulated, you're going to have to protect that information more," Hulver says. "Secondly, the attacks have become much more sophisticated, where hackers and criminals have decided to steal valuable data."

The combination of an increase in security threats and reduced IT staff means many IT managers feel that they may not have all the necessary tools to protect the enterprise. For example, 65% of respondents indicated that they were not confident that the organization has complete visibility into its security posture at any given point in time. "There's a dilemma for how you cost-justify security, and although security professionals understand that the data center is under attack more than in the past, decision makers may not see a need until you've been attacked," Hulver says.

### What You Can Do

NetForensics suggests that the solution may not be internal, but rather outsourcing to cloud security because you pay only for what you use—there's no need to budget for maintenance costs for security applications or hardware. "Another advantage, which is a fairly new phenomenon with security, is that you can get a service-level agreement that can help you prevent and recover from a breach, should one occur," Hulver says.

SMEs can also invest in affordable technologies that improve existing security infrastructures without adding costly hardware, such as security as a service. One of the biggest and least costly measures SMEs can take, according to Hulver, is offering awareness training to teach employees to ensure the validity of people and sources of information, which can help cut down on social engineering threats.

*by Nathan Lake*

SERVERS

SIX QUICK TIPS

# Consolidating Servers

## Use Virtualization & Other Measures To Stop Server Sprawl

*by Bruce Gain*

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**As enterprises have become** more dependent on information technology—and specifically the client server model—the proliferation of servers has become a common occurrence. The rub is that these servers, even though they fulfill a variety of business purposes, are often underutilized.

Underutilized assets lead to business inefficiencies such as decreased ROIs, excess energy consumption, and misallocation of physical and personnel resources. And, ultimately, these business inefficiencies express themselves in the financial bottom line. Fortunately, server consolidation is a powerful tool that can help administrators get a handle on server sprawl and deliver solid business savings.

### Perform Ample Upfront Planning & Analysis

Just like every other fairly complex business undertaking, performing upfront planning and analysis is the best way to ensure successful data center consolidation, says Jason Dea, product marketing manager at Novell (www.novell.com). A well-conceived consolidation plan, he adds, can help achieve a good ROI for the project and mitigate any associated risks.

It is important to keep in mind, Dea says, that effective server consolidation via virtualization is an ongoing process of refinement and not a one-time event. The goal, he adds, should be successful technology adoption and sustainability. Also, the criticality of applications hosted on a server should drive the process: for example, administrators can be more aggressive when virtualizing noncritical test or development servers.

### Perform Virtualization Analysis

When virtualization is used to deliver server consolidation, administrators should perform a "virtualization assessment" to analyze the environment before any action is taken, says Dave Sobel, CEO at Evolve Technologies (www.evolvetech.com). A virtualization assessment should include an inventory of servers and attached peripherals, analysis of server performance characteristics and hardware needs to support virtualized servers, backup and disaster recovery analysis, and an initial virtual resource assignment, he adds.

This analysis enables administrators to zero in on the ideal candidates for virtualization within their environments. Obvious candidates for virtualization include systems with minimal processor utilization, systems with RAM requirements and drive storage needs, systems with redundant or warm-spare servers, limited-use servers, and systems where many partially trusted people need console access.

By the same token, this analysis should also identify candidates that are not well suited for virtualization. Examples of these include systems with constant high processor and/or RAM usage, systems with peripherals (serial, parallel, USB, external SCSI, license key fobs, scanners, bar code readers), systems with exceptionally high network usage (such as Gigabit networking), and systems with specialized hardware requirements, Sobel says.

Once virtualization candidates are identified, administrators must then proceed to implementation. The first step, say Edward Lewis and Jeff Holland, senior technical architects for Systems Alliance (www.systemsalliance.com), is to decide which virtualization hypervisor is best suited for the specific server workloads and management requirements. Once a software hypervisor is selected, they add, the hypervisor's hardware compatibility list should be consulted to determine supported hardware servers. At that time, Lewis and Holland say, administrators can decide whether they want to use rack-mounted servers or blades.

Next, they add, administrators should utilize a server virtual machine process to determine which utility or new servers get virtualized. The purpose for this is simple: avoiding virtualization sprawl, which defeats the purpose of doing physical server consolidation in the first place. Once these steps are done, administrators can then move on to the actual task of moving physical servers to virtual machines. Hypervisors have features that help with this task.

### Use The Right Tool

Simplistic tools that are popular for identifying consolidation candidates do not perform a very deep analysis, says Scott Adams, director of product management at TeamQuest (www.teamquest.com). These tools, he adds, often add up a few key metrics and simply check them against a threshold. Also, he adds, they do not understand the details of resource contention and assume performance degrades linearly as systems become loaded, or they reserve too much capacity to avoid having to account for nonlinear queuing delays.

These simple tools, Adams says, are great for getting a rough idea of potential consolidation candidates; however, when important applications are undergoing consolidation, it makes sense to perform a more sophisticated analysis that accounts for the nonlinear delays that can occur when the inevitable resource bottlenecks happen.

### Remember The Old Stuff

In all the discussion about server consolidation, it is easy to forget about the equipment about to be "retired." Cliffie McKay, director of operations at DMD Systems Recovery (www.dmdsystems.com), says administrators should keep in mind the equipment they are removing whenever they undertake a server consolidation project. This includes understanding the details behind transferring programs and data, creating enough storage space, depreciating equipment from accounting books, recycling the equipment through a legitimate recycler, and destroying any data stored on server hard drives.

For example, McKay adds, whenever programs and data are transferred from consolidated servers, administrators must ensure users still have access to the programs and data during the process so downtime can be avoided.

In terms of timing, McKay says companies should have a retirement plan in place from the time they begin preparing for a server consolidation project. Because some equipment has costs associated with recycling, uninstallation, and data destruction that can impact a server consolidation budget, administrators should receive "worst case" quotes that can be factored into the budget. P

**Best Tip:**

### Pay Attention To Networking

Preferably before launching a server consolidation project, administrators should consider the fact that poor application performance can result whenever applications from local branch office servers are consolidated to a centralized data center, says Frederic Hediard, vice president of product marketing at Streamcore (www.streamcore.com). End users, Hediard says, can suffer from latency and network congestion when applications are accessed across the WAN.

The way to alleviate the problem, he adds, is to implement proper bandwidth management and provide priority for critical applications. Full visibility of all network traffic, says Hediard, can help pinpoint root causes of latency and network congestion.

**Easiest To Implement:**

### Use More Server Memory

Uri Cohen, product manager at GigaSpaces (www.gigaspaces.com), says increasing the use of a server's memory instead of heavily utilizing the disk is one way to consolidate servers. Taking this step, Cohen says, increases application efficiency and throughput, thus allowing them to run on fewer machines. And, he adds, leveraging server RAM for storage eliminates "trips" to slow storage devices, thus maximizing application processing power.

## BONUS TIPS

■ **Train the staff.** Dan Shauver, manager of systems engineering at Laurus Technologies (www.laurustech.com), says administrators should ensure staff receives training ahead of a consolidation. Even though data center managers are usually experts, training can still provide tips on the new environment that will help in the overall consolidation effort.

■ **Make sure it can be virtualized.** If virtualization is part of your consolidation plans, Shauver says administrators should make sure that an application can be virtualized at all. Even though this is becoming less of an issue, he says, there are still applications that don't work well in a virtualized platform.

CLIENTS

FEATURED PRODUCT

# Reach For The Clouds

## Proginet's New Service For Managed File Transfers Utilizes A Cloud-Based Infrastructure

*by Joseph Pasquini*

• • •

**Enterprises of all sizes** are often frustrated by the complexities associated with file transfers and the need to conduct such transactions as securely, dependably, and proficiently as possible.

Long-established file transfer methodologies are often hindered by wearisome administrative and maintenance burdens, not to mention intrinsic security risks in need of proper mitigation. Moreover, companies often rely on dissimilar legacy as well as customized in-house solutions for the management of critical file transfers. As system administrators know all too well, a failed file transfer can rapidly impact a company's reputation and, ultimately, its survivability. The need to properly comply with a swarm of audit and regulatory requirements only adds to anxiety levels.

To better help organizations cope with the complexities and pitfalls of conventional file transfer implementations, Proginet (www.proginet.com) has introduced AnyFileNow, its high-performance universal file transfer service designed to replace the messy plethora of tools and practices commonly found within most organizations.

### Software As A Service

Delivered as a Web-based SaaS solution, AnyFileNow utilizes cloud-based providers harnessing VMware's vCloud technology rather than relying on conventional investments in hardware, software, and network infrastructure at the organizational level.

"AnyFileNow is the first universal file transfer solution," says Sandy Weil, Proginet's director, president, and CEO. "It is the industry's first affordable, scalable Managed File Transfer (MFT) service to address the top five critical use cases: internal/external file transfers, ad-hoc file transfers, B2B/EDI transactions, email attachment management, and large file transfer acceleration. In addition, it streams data directly, eliminating storage in the cloud; allows for encrypted storage; reduces bandwidth consumption; and improves overall security."

Proginet is no stranger to the trials and tribulations of file transfers. Headquartered in Garden City, N.Y., Proginet has been a major player in the file transfer market segment for the past two decades and has a global customer base that extends across more than 30 countries and includes numerous Fortune 500 entities. "We have leveraged our proven, proprietary technology and deep expertise to create AnyFileNow," says Weil.

"No other file transfer solution can do what AnyFileNow does. We've taken all of our proven, enterprise-grade file transfer technology and put it in the cloud so any organization can have a quick, secure way to manage all internal and external file transfers without file size limitations, security risks, and complex product licensing situations," Weil says.

"No competitor can manage the entire file transfer spectrum; competitors can only provide disjointed pieces of functionality, leading to an unnecessarily complex IT platform for most companies," adds Weil.

### Technical Details

Leveraging the browser and the Java Runtime Environment, AnyFileNow offers support for a host of operating systems, including Windows, Linux, AIX, HP-UX, Solaris, zLinux, iSeries, and IBM z/OS as well as Mac OS and OpenVMS. In addition to the standard browser clients, a CFI Platform Server installation for Windows or Unix/Linux is also included with a subscription to the AnyFileNow service.

AnyFileNow features preconfigured templates to get users quickly up and running. According to Proginet, users should anticipate seeing transfer speeds of up to 30 times greater than standard FTP when using AnyFileNow. To ensure secure data transfers, AnyFileNow supports a range of encryption protocols, including HTTP, HTTPS, FTP, FTPS (SSL), SFTP (SSH), AS2, SCP, and CFI. EDI/XML translation is available as an option. The service also supports an unlimited number of authorized users and connections. Integration with Active Directory and other LDAP solutions is supported but is not required. "AnyFileNow meets IT's most stringent network security requirements in a way that is painless, transparent, and easily understood by all parties," says Weil.

AnyFileNow's detailed auditing and reporting tools offer compliance with mandated standards such as Sarbanes-Oxley, PCI DSS, HIPAA, Gramm-Leach-Bliley,

and FIPS 140-2. Management of the AnyFileNow client software is performed via a command console that allows admins to review and control all file transfer activities. Both internal and external transfers can all be configured and tracked via the console. Scheduling options and event-driven capabilities enable lights-out automation of all file transfer processes.

In addition, AnyFileNow elevates email attachment management to the level of the managed file transfers and makes attachment control and monitoring just another element of the overall file management governance model. Proginet also offers a plug-in module for Microsoft Outlook.

In the rare event that a file transfer is interrupted, AnyFileNow's built-in Checkpoint Restart feature minimizes transmission delays by resuming the transfer process right where it left off when the transfer originally failed; data already transferred prior to the interruption is not re-sent. Compression is also supported.

Data centers within the AnyFileNow computing cloud provide N+1 redundancy and SAS 70 certification. High Availability mode is standard with the Proginet service; other modes are also available for enterprises with unique requirements.

Available online as a 15-day free trial download, monthly subscriptions to Proginet's AnyFileNow file transfer service start at a monthly rate of $299. A one-time startup fee of $499 is also required.

### Ending The Aggravation

According to Weil, data transfers are an escalating priority due to the demands of globalization, outsourcing, and virtualization. Nevertheless, Weil contends that a lack of standards often results in many organizations relying on a mixture of disparate—and sometimes even unsecured—point solutions. "Most companies are still struggling to manage file transfers effectively. They don't understand exactly what is being sent to and from their organization in real time and are therefore constantly exposed to security risks. Even in the midst of heightened regulatory, audit, and compliance requirements, few organizations have a secure and reliable way of transferring critical business files consistently and transparently," Weil says.

"AnyFileNow eliminates the frustration of the unknown—companies no longer need to wonder where a file is or if something that was sent was completely secure," says Weil. "It takes the complexity out of file transfer problems and ensures that any company can have one quick-and-easy, enterprise-grade file transfer solution."

He concludes, "Organizations can be up and running within one business day with confidence that our solution can scale to meet their growing needs." P

#### Proginet AnyFileNow

**(888) 333-7205**
**www.proginet.com**

**Description:** High-performance managed file transfer service that leverages a cloud-based infrastructure to provide fast, secure transfers.

**Interesting Fact:** Deployed as a SaaS solution, AnyFileNow can perform file transfers up to 30 times faster than traditional FTP methods.

## Nixsys Legacy O/S & ISA Slot Computers — NEW PRODUCT

*by Blaine Flamig*

### Workstations For Legacy & Unique Needs

**NIXSYS Legacy O/S & ISA Slot Computers**
Provide upgrade paths to companies that need to update their current computers but still want to put their existing legacy components to use.
ISA Slot: $560 and up; Legacy O/S: $300 and up

**Not every company** that finds itself in need of updating its fleet of computers is in a position to outfit the systems with the latest components and operating system. Instead, some companies need to update their current systems to add more power but on the condition the new computers can support the existing legacy components the company owns and wants to continue using. Similarly, some companies are in need of updated systems that can run legacy operating systems and are affordable.

NIXSYS, a provider of custom-built workstations and servers, recognizes these needs. The company's ISA Slot and Legacy O/S product lines offer companies various models of powerful systems that also provide the flexibility to work within the component constraints a company may be facing.

Available in six models, the ISA Slot line of computers provides three or more full-sized ISA slots in tower and 3U/4U rackmount chassis options. The systems also come with a choice of Intel Pentium 4 or Celeron processors; up to 2GB DDR RAM; and OS choices that include Microsoft Windows XP Professional, Windows 2000 Professional, Windows 98/95, Windows NT, MS-DOS, and O/S2. NIXSYS can build systems using other formats upon request.

As with the ISA Slot models, NIXSYS' custom-built Legacy O/S computers support up to 2GB memory and provide companies a choice of Intel Pentium or Celeron CPUs in combination with Intel's 845GV chipset. The systems, which include the use of new, industry-standard components, come in micro, mid-tower, and tower options, as well as 2U/3U/4U rackmount and specially requested format options. OS configuration choices include WinXP Professional, Win2000 Professional, Win98 SE, Windows NT 4.0 Workstation and Professional, and MS-DOS.

NIXSYS OPEN SYSTEMS

(866) 464-9797
www.nixsys.com

SERVICES PRODUCT SPOTLIGHT

# IT Training

**Company** Global Knowledge

**Description**

Global Knowledge is the worldwide leader in IT and business skills training. The company delivers courses via training centers, private facilities, and the Internet, letting customers choose when, where, and how they want to receive training programs and learning services. Global Knowledge specializes in high-quality, hands-on data center training courses that are delivered by accomplished cross-domain experts. Instructors are certified Cisco Systems and VMware Certified instructors with real-world experience. The company's broad-based data center curriculum includes VMware, Cisco, Sun, IBM, Red Hat, and Microsoft courses as well as other subjects.

- Learn from experienced instructors and award-winning curriculum
- Engage with custom hands-on labs and exercises
- Choose from robust delivery options
- Train a local group or a dispersed workforce
- Select from more than 1,200 courses

**Best For:** IT training for the individual or for the enterprise organization that requires skills development or certification.

**Company** NetCom Information Technology

**Description**

NetCom Information Technology, headquartered in New York, was recognized by Microsoft as its 2007 Worldwide Learning Solutions Partner of the Year. NetCom has training centers located in 18 states across the country and offers training solutions for more than 1,000 technical, application, and project management courses to Fortune 500 companies, businesses, government agencies, and individuals. NetCom's subject matter experts provide authorized hands-on education in the latest technologies from leading vendors, including (ISC)2, Adobe, Autodesk, Check Point, Cisco, Citrix, CIW, CompTIA, EC-Council, Microsoft, Novell, Oracle, PMI, and others. NetCom is an authorized testing center for Sylvan Prometric, VUE, and Certiport. The company is also a New York and New Jersey Workforce Training Provider and a licensed school registered with the New York State Education Department.

- Provides world-class training and certification preparation for the most in-demand computer technologies
- Offers authorized career training classes in Microsoft, Cisco, Adobe, PMI, Autodesk, Oracle, Novell, CompTIA, and more
- All courses and boot camps are hands-on, led by certified instructors using the latest equipment
- On average, NetCom instructors have 11 or more years of experience in the subjects they teach
- Curriculum options aimed at helping students become Web site developers, database administrators, computer programmers, graphic designers, security specialists, and project managers
- In the last decade, NetCom has delivered training to thousands of individuals and corporations

**Best For:** IT, security, and project management training for beginners and also for experienced staff looking to enhance their careers or enter a new market.

**Company** TechSkills

**Description**

TechSkills is a nationally recognized leader in education delivery, specializing in skills and certification training for careers in information technology, healthcare services, and business. TechSkills' teaching methodology combines elements of traditional instructor-led education, the latest online learning tools, and extensive hands-on skill-building to create an effective and efficient learning process. Students control what they learn, when they learn, how they learn, and how rapidly they progress. Based in Austin, Texas, TechSkills operates more than 25 campuses in 16 states. TechSkills campuses are licensed in each state in which they operate, and select TechSkills campuses are nationally accredited by the Accrediting Council for Continuing Education & Training.

- Offers personalized programs that include morning, afternoon, evening, and weekend classes; online and on-campus study options; intensive small group "microlab" training sessions; and the latest online learning tools
- Course customization lets you skip what you already know and progress at your optimal speed
- Hundreds of hands-on lab activities to provide real-world experience
- Online access 24/7 lets you work through on-the-job scenarios in real time
- More than 90% of TechSkills' students pass their industry certification tests on their first attempt; if you don't pass your certification test the first time, TechSkills will pay for one retake for every successfully completed course
- Job placement assistance that includes personal coaching, help with résumés, and career development workshops
- Multiple programs, including Microsoft, Cisco, Oracle, and IT security certification

**Best For:** Students seeking certification in IT, technical, or business areas.

**Company** United Training

**Description**

Actually a consortium of independently owned training centers, United Training concentrates on helping its members provide high-quality IT training from regional providers. Since 2000, the company has been delivering training nationally and developing strategic relationships with manufacturers and vendors of IT-related products and services. The company's goal is to provide quality training throughout North America on any IT training product, anywhere, and at any time. United Training offers in-class, private, and mobile classroom training options, and many members offer Web-based virtual classrooms. United Training regularly offers free Webcasts. In addition to the typical communication channels, members and students can comment on and communicate with the company via Twitter and Facebook.

- Microsoft Gold Certified Partner
- Courses offered in most states and in Canada
- Hundreds of courses offered in more than 50 technology areas, including Web development, programming, CRM, SQL Server, and Exchange
- Many courses offered for Cisco, MCSA/MCSE, and other certifications

**Best For:** IT staff seeking basic or advanced certification in multiple areas and employees needing introductory coursework in popular business applications.

*Processor*'s Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

*Compiled by Rod Scher*

## New Horizons Computer Learning Centers

With more than 320 locations in 70 countries, New Horizons is the world's largest independent IT training company. For the past 28 years, the company has delivered a full range of IT training and certification and business skills education. The company has helped more than 25 million students and offers courses in hundreds of locations around the world.

- 320 New Horizons locations worldwide, specializing in Microsoft and Cisco products and technology
- Cisco's North American Learning Partner of the Year for 2009-2010
- Microsoft's largest worldwide training partner
- Flexible training: mentored learning, instructor-led, classroom and online, self-paced e-learning
- The only provider with Mentored Learning capability that gives you all the benefits of an instructor while learning at your own pace
- More than 50 authorized Cisco locations in the United States
- Local centers, instructors, and customer service teams that tailor learning paths specifically to your business/career goals

**Best For:** New and experienced IT staff, including experienced Microsoft technical staff looking to cross over into Cisco routing, switching, and voice products, and those seeking additional ways to increase their marketability. Also ideal for help desk professionals looking to improve their skills and enhance their career options.

## Unitek

Unitek's IT training division offers hundreds of courses in dozens of categories, many of them available as all-day, daytime, or evening courses. The division specializes in IT training, with Microsoft, Cisco, CompTIA, Red Hat, Sun, and other security certifications offered. Some courses are offered over the Web. If you're in a hurry, Unitek's special accelerated "boot camps" are aimed at teaching specific skills, tools, or technologies over a limited time span in a zero-distraction environment.

- Courses offered in 13 cities in six states, plus online
- If your company has four or more people taking the same course, you can "anchor" the course, thus guaranteeing that it will run
- Onsite training available
- Courses offered for both end users and corporate administrators
- Unitek is a NetApp Authorized Learning Partner and an authorized Prometric testing center, operating multiple exam sites in Fremont and Santa Clara, Calif.

**Best For:** IT staff seeking basic or advanced certification in any of several areas: Microsoft, Cisco, Citrix, Linux, and others.


Automated Systems Design, Inc.

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iGLO-ITS™ Fiber Optic Module

iCAT-ITS

iCAT-ITS™ 600MHz Cat6E Enhanced Cable

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PROCESSOR

SERVICES PRODUCT SPOTLIGHT

# Equipment Recycling &

| Product | AnythingIT | Apto Solutions | Classic Computer Recovery |
|---|---|---|---|
| Description | With a suite of IT asset management services, including testing, auditing, and processing, AnythingIT can help you deal with your aging technology. AnythingIT's consultants will perform an IT asset review and analysis that uses a fair-market evaluation of your current technology.<br><br>• Recycle Tomorrow program saves costs in the remarketing and recycling process<br>• Can process IT assets at multiple ISO 14001-certified facilities globally<br>• Offers custom-designed channel and non-channel programs for OEMs and integrators servicing both government and commercial clients<br>• Knowledgeable in disposal processing, data mining, and warehouse systems for IT assets<br>• Unparalleled past performance servicing public-sector clients<br>• Innovative trade-in and asset recovery programs<br><br>**Best For:** Enterprise organizations that need help making cost-effective business decisions for IT storage, disposal, resale, donations, and recycling. | Apto Solutions can help you monetize downsized or liquidated assets, and the company can handle the sales process for you, including market research, valuation, collections, and shipment.<br><br>• Features compliance programs for environmental, export, data security, and electronic tracking issues<br>• Logistics management for recovery and consolidation to the Apto warehouse<br>• Inventory Management System lets you track the trade process<br>• Maximize return on investment through an extensive contact network and market knowledge<br><br>**Best For:** Companies looking for a recovery service with experience, credentials, and expertise in technology remarketing. | Classic Computer Recovery can refurbish, reuse, and recycle all types of electronics, including PCs, copiers, and televisions, because of the company's zero-waste policy. The inventory is evaluated through a multitest process for serviceability, and the company's associations with wholesale and retail markets allow Classic Computer Recovery to resell the parts of units that can't be sold as a whole unit.<br><br>• Equipment is refurbished with working components<br>• For equipment that can't be resold, the unit is broken down into separate components<br>• Hardware that's too old for resale is recycled for raw materials<br>• Data is removed using the DoD's 5200.28-STD directive<br><br>**Best For:** Enterprises that have a variety of electronics to remove and recycle. |

| Product | Electra Worldwide | Frontier Computer | Horizon Datacom |
|---|---|---|---|
| Description | Electra Worldwide specializes in providing safe, secure, and reliable electronics recycling that produces the greatest benefit to the environment while minimizing the financial impact on its customers. The company has developed systems and solutions that ensure peace of mind—it manages the entire recycling process from start to finish, guaranteeing that clients receive the best value for their equipment.<br><br>• Specializes in sustainable recycling and refurbishing of electronics<br>• Zero landfill goal<br>• Complete turnkey solution for clients' e-waste and asset management needs<br>• Employs the latest sanitization and destruction techniques<br>• ISO 14001 and R2 certified<br>• Proprietary tracking system ensures that clients can monitor the process<br><br>**Best For:** Medium-sized to large companies concerned about reliable, secure, and certified asset destruction or remarketing. | Frontier Computer has been in the business of helping companies plan, build, and maintain their IT infrastructures since 1976. The company buys used computer equipment, excess IT hardware, and enterprise-level IT equipment, including servers, workstations, peripherals, storage arrays, and networking tools.<br><br>• Buys excess new or used enterprise equipment<br>• Offers environmentally friendly end-of-life services for obsolete IT assets<br>• Works with Cisco, HP, IBM, and Sun hardware<br>• Global presence helps Frontier respond with speed to customer demands<br><br>**Best For:** Enterprises that want to sell their equipment to a company with decades of experience with IT hardware. | Horizon Datacom purchases network LAN/WAN, wireless, and VoIP equipment from a variety of manufacturers, including Cisco, Juniper, Nortel, Polycom, and 3Com.<br><br>• Tests and refurbishes used equipment<br>• Offers a complete buyback program to protect your hardware investment<br>• Real-time inventory with everything shown in stock<br>• Rated A+ by Better Business Bureau<br><br>**Best For:** Companies getting rid of surplus networking and communications equipment. |

*Processor*'s Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

*Compiled by Rod Scher*

# Disposal Services

## Converge

Converge focuses on data security and protecting clients from liability by leveraging technology, processes, and customized solutions into the right mix of end-of-life IT asset management and disposal services. And with Converge's 30 years of technology remarketing experience, customers can mitigate or eliminate the costs associated with compliant IT asset disposal.

- Ultimate data security protection
- Environmentally compliant disposal
- Comprehensive remarketing, redeployment, and donation strategies
- Real-time, comprehensive reporting

**Best For:** Enterprise or global organizations needing a secure, compliant global IT asset disposal strategy.

## Data Media Source

Data Media Source buys used tape media, including LTO, AIT, and SDLT, and provides free data destruction, taking care of all the logistic and security concerns you have. Sold media can be turned into cash or exchanged for brand-new media.

- Provides value of the tape and details costs involved
- Tape is shipped with complete chain-of-custody documentation
- Tape is inspected and sorted—you'll be notified of completion
- Once inspection is complete, paperwork is processed for payment

**Best For:** Companies in the process of removing or renewing their tape libraries.

## DMD Systems Recovery

DMD Systems Recovery works hard to minimize your risk and maximize your payback, so you'll get a solid return on investment without worrying about the possibilities of regulatory fines, bad publicity, or litigation from data theft on hard drives that weren't properly sanitized. DMD Systems Recovery offers data deinstallation, packaging, logistics, data destruction, recycling, and remarketing.

- Removal and packaging services to preserve value
- Increased ROI through direct purchase or profit sharing
- DoD 5220.22-M-compliant data wipe and NAID-compliant destruction
- Reduced risk through certificates of destruction and compliance and transfer of ownership

**Best For:** Data centers, call centers, and companies with large centralized operations.

**Contact:** (877) 777-0651 | www.dmdsystems.com

## Reclamere

Reclamere's experienced team works with you to develop a data security plan tailored to meet your data destruction, data recovery, and IT asset management needs. Reclamere's experts can also help you execute your legal responsibilities for each phase of the IT equipment life cycle, which helps protect the company, employees, and clients from data breaches.

- Certified data destruction
- IT asset management for safe and secure preparation of electronic equipment
- IT audit and assessment to evaluate a company's risk level
- E-discovery and litigation support to recover information from hard drives for legal procedures

**Best For:** Enterprises most concerned about the security of outdated IT assets.

## Recycle Your Media

Recycle Your Media has a proprietary system for fully erasing data tape media cartridges. The process erases each tape from pin to hub with a magnetic degauss power that's 10 times stronger than DoD degaussing standards. Recycle Your Media offers premium pricing paid now on the following media formats: DLT VS160, 3592, T10000, of T-10000, LTO-4, AIT-4, AIT-5, VXA X-23 tapes, all brands.

- 100% full-length, pin-to-hub erasure for total security
- Recycle Your Media pays for tapes—no more costly shredding services
- Full chain of custody
- Volume serial reports
- Certificate of data destruction
- Drive read/write data test and reset to blank tape, ready-to-write status
- Final quality assurance scan step to confirm full erasure, reset, and data integrity

**Best For:** IT staff who want a green alternative for recycling tape media that's out of its retention period and who need full data erasure and reporting on every tape recycled.

## Redemtech

Redemtech specializes in helping Global 1000 IT organizations reduce the cost and risk of technology change. Our ITAD (IT Asset Disposition) services recover, refurbish, redeploy, resell, and recycle IT assets of every kind with security and transparency.

- Red Rabbitt brand of Microsoft Authorized Refurbished equipment increases value recovery
- High-security reverse logistics virtually eliminates data and asset security risk in-transit
- Global e-Stewards certification ensures responsible management of e-waste
- Surplus IT donation program to support low-income families and nonprofit organizations that lack basic technology
- Integrated operations across the United States, Canada, Mexico, and Europe ensure uniform services delivery and centralized asset management

**Best For:** Enterprises engaged in highly distributed asset recovery and reuse programs, large and small disposal projects, and high-value portfolios.

# Get Corporate Approval For Projects

## Follow A Set Process That Starts With Meeting Stated Business Goals

*by John Brandon*

• • •

**Corporate approval** for IT projects is a mysterious art form. It usually involves negotiation and compromise, serious number-crunching, and sometimes just catching an executive in a good mood. Part of the consternation is that the technology is so complex and ever-changing: It can be difficult to explain why IT needs to engage in a new project when business units do not understand the benefits.

Yet, the approval process does not need to be so perilous for data center managers who follow a set procedure that involves doing research, proving the current technology platform can support the new technology, and being ready to compromise on the minor discrepancies.

### Where To Start

Brian Barnier, consultant with ValueBridge Advisors, says the approval process starts by putting the business in the right context and showing that any new expenditure matches up with the business objectives for profit and revenue. This intersection of IT and business is a critical first step in gaining approval because it shows that IT is seeking to adhere to revenue goals and not just jumping a technology bandwagon.

"Make sure it really is the top priority to the business," says Barnier. "The CIO needs to ensure the top risk/return combinations are coming to the business leaders (meaning those in the functional, departmental, and geographic segments), rather than who has the biggest voice among the IT staff. Note that the risk includes both IT implementation and the likelihood of ongoing business benefit."

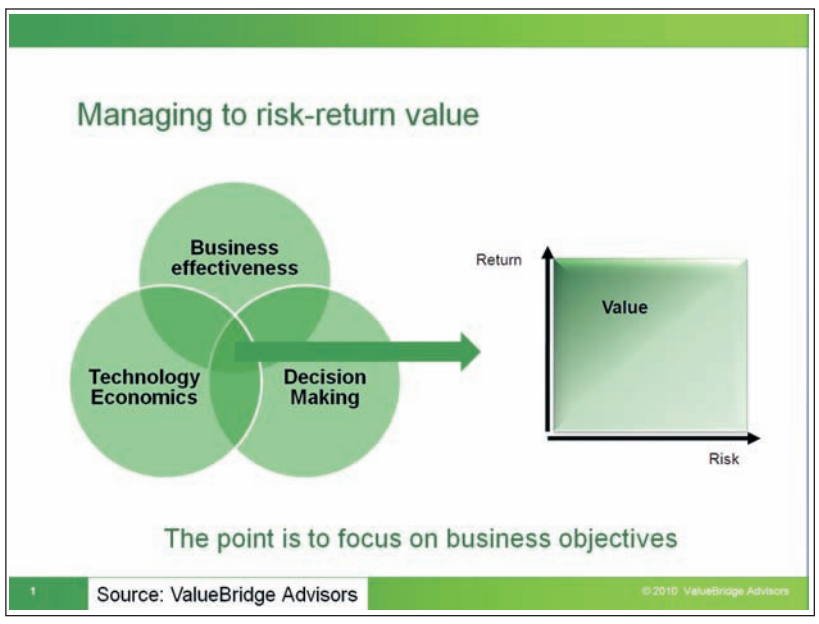
Barnier says the issue is not just the dollar amount for a project but whether the business unit has legitimate buy-in for the project. This can mean getting support not just from a budgeting standpoint but also from an engagement standpoint—the level of support you have from the business.

"Good decisions depend on the decision process, [getting] the right information to the right people at the right time to make the right (or at least better) decisions with accountability," Barnier says.

### Following The Process

Once you establish that all IT projects need to match the business goals, the next step is to start a set process for approval. It all begins with research, says Barnier, who suggests doing solid business analysis upfront to get agreement on why the company needs to do the project.

"It should be a solution that balances efficiency, effectiveness, and risk in the context of business initiatives like productivity, flexibility, and time to market," Barnier says. "Solid architecture and IT process management comes in here—getting agreement on what the project is."




**In seeking corporate approval for projects, it is important to find the intersection between what the business needs and what is technologically possible within your organization.**

The next step, after the research and zoning in on exactly what you want to do, is to develop this background work into a solid business case that compares the risks and rewards. For example, you may be able to show a solid business case for a new virtual storage system, but you should also go to the next step in showing the risk and reward variables for adopting that new technology.

"With the right people, in an agile, informed, and accountable process, good decisions are far more likely to result," Barnier says. "The bonus is that the program management generally also gets more agile so it is easier to segment projects, [adjust] to changing needs, and otherwise avoid wasted spend."

### Getting The Approval

Doing the hard work of matching up IT projects to business goals, proving the business case, and showing the risk and reward variables will definitely help prepare the project for approval. You can show beyond a shadow of a doubt that, yes, the risk of starting a new project is much less than the reward of moving the business forward and helping business units meet goals.

However, as Craig Nunes, vice president of marketing at storage provider 3PAR (www.3par.com), points out, IT also needs to map out exactly who the stakeholders are for approval and which executives will need to approve a project. This can require some extra effort on the part of IT in researching which business units are involved, the typical approval process, and what each executive requires.

Leon Thomas, president at Web services company Jelecos (www.jelecos.com), adds that managers need to make sure they involve all stakeholders in the process to ensure there are multiple perspectives involved. "Having another set of eyes on the process ensures buy-in and creates the opportunity to question the vendor without damaging the working relationship and mutual rapport."

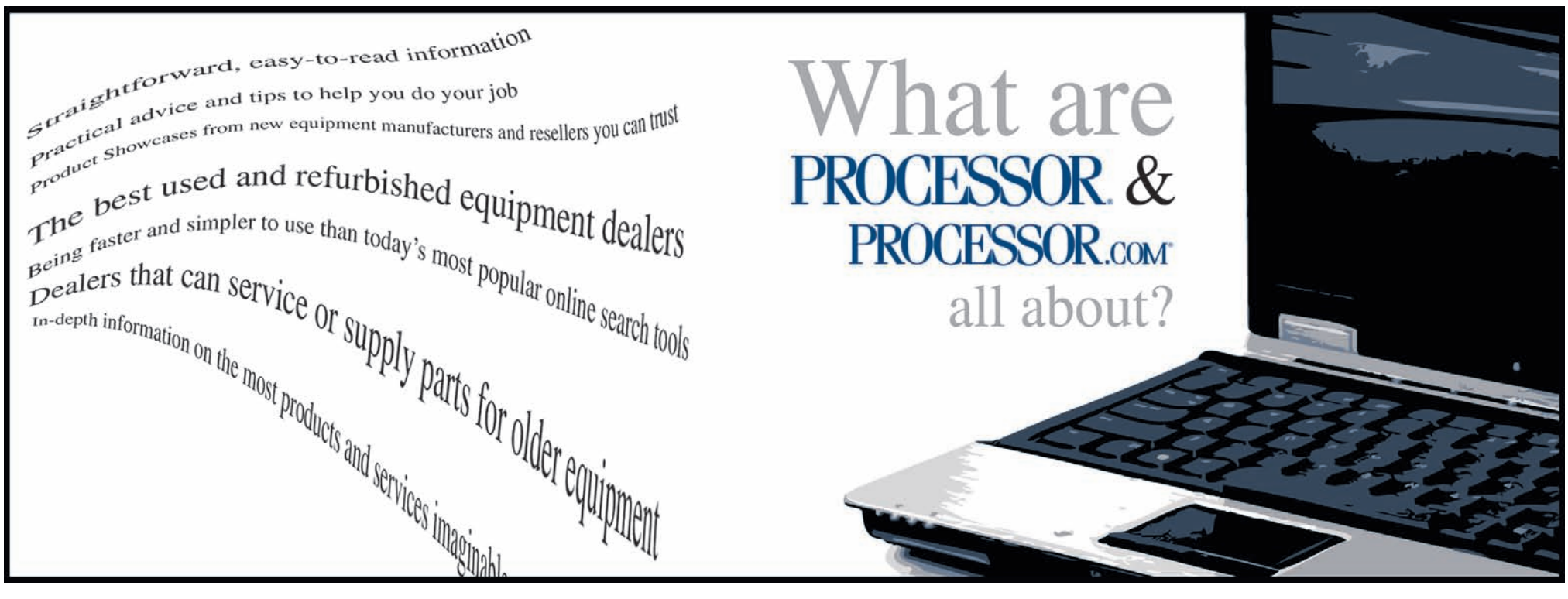
Nunes also notes that another stumbling block for approval is not showing the executives and business units that the new project is one that IT can support with the existing infrastructure. There may be an airtight case for adopting the new project, but IT also has to show the platform is there to support it.

It's also important to consider the staffing requirements for a project. According to Thomas, staffing requests need to be justified using peer company benchmarking such as the number of information workers per IT support headcount. "They should be correlated with the company's performance, to a certain degree. While there are economies of scale and efficiencies to be had as a company grows, it's safe to say an increase in headcount for a company that has a 20% decline in revenue is probably a lost cause unless there's a very strategic project that needs resources."

In the end, as Barnier notes, doing the legwork of researching needs, analyzing what needs to be done, and then following through by examining the risks and rewards will help make the approval process much easier. The more you know, the easier it will be to gain the approval. P

### Key Points

- Research exactly why the business needs the new IT project, rather than proving the case because of a technological need.
- Determine the scope of the project and what needs to be done to meet the business needs you already established.
- Decide who needs to approve the project and the process that is normally required for that business leader.



DATA CENTER MANAGEMENT

SIX QUICK TIPS

# Data Center Equipment Refreshes

## Get The Best Value By Knowing When & How To Proceed

*by Sixto Ortiz Jr.*

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**A NUMBER OF FACTORS** can make equipment refreshes a complex process. For example, new components can turbocharge computing or networking efficiencies long before the forecasted end of the existing equipment's planned life cycle. Servers crash, UPS systems go bad, or networking equipment is damaged, which can make product refreshes a sudden necessity. At the same time, replacing a single component or piece of equipment involves assessing how the new part will fit in the entire data center infrastructure and factor into the enterprise's overall business strategy.

Here are some ways to get a better handle on the complexity of data center equipment refreshes and how to get more value out of the process.

### Look At The Big Picture

It can be tempting to go ahead with an equipment refresh that will generate a short-term efficiency gain or eliminate a bottleneck. However, any refresh should involve stepping back and looking at the big picture by first determining the effects that an upgrade or equipment replacement will have on the entire data center's infrastructure.

"Before you begin spending a lot of money on refreshing the data center, you need to look at the data center as a whole," says Nik Simpson, a senior analyst at Burton Group.

Looking at the big picture will also help to avoid spending the time and money involved in revamping a piece of equipment only to find out later that other data center components are not able to take advantage of the efficiency gain.

### Manage The Refresh Schedule

Equipment will wear out or become obsolete at different points in time, which adds yet another level of complexity when scheduling refreshes. Each component group's life cycle must be assessed and planned for separately.

"You use whatever tools you have, and each director and manager has to do it themselves and in their own way, and they have to look at the five-, two-, and one-year horizon and budget recycle [for the different equipment]," says Brad Kowal, an IT manager for Shands HealthCare in Florida. "They are also all linked together."

For servers and storage equipment at small to medium-sized enterprise data centers, a three-year life cycle is recommended, Simpson says. For networking equipment, three to five years is a good life cycle before a refresh is in order. UPS systems can last longer, but a refresh is usually a good idea after 10 years, when they are likely no more than 80% efficient, he says.

### Determine Must-Haves & Nice-To-Haves

The IT admin is faced with constant product and sales pitches from vendors. Deciding whether an equipment refresh is necessary is difficult when a firm's marketing arm tries to convince the admin to buy their "must-have" products and services. "The typical problem with technology refresh cycles is that they are vendor-driven and not IT- or business-driven," says Rob Enderle, principal analyst for the Enderle Group. "They tend to be tactical and have more to do with good salespeople or a desired new technology than good business practices."

A tactic that can be used to filter out the nice-to-have vs. must-have equipment refreshes is to determine how an interesting product or technology will factor into the overall strategic goals of the enterprise. "Generally, any strategic refresh process should start with a strategic goal," Enderle says. "Cost reduction alone is too generic to be useful and often becomes counter-strategic."

Software is an area in which many admins tend to lean toward investing in a refresh when not absolutely necessary, says John Matzek, CEO of Logic IT Consulting (www.logicitc.com). "You might want to get the latest version of Office or an operating system, but you don't really have to do it, because you can wait until you get a new machine," Matzek says.

### Know How The Refresh Fits

It is necessary to know exactly how a refresh will fit into the overall puzzle of the data center infrastructure. "If you are not understanding the benefits or the pros and cons of what you are doing for the upgrade, downgrade, cross-grade, and money being spent, then you do not have a strong enough handle on your architecture," Shands HealthCare's Kowal says.

After an evaluation, you may realize that there is "no point in spending more money on a data center," Simpson says. "After understanding where you are and where you are going to be two to three years from now, then it may not make sense to throw more money into the existing facility in terms of refreshing hardware or improving cooling and power efficiency," Simpson says. "You may be looking at a situation where 18 months from now you are going to run out of power and cooling capacity no matter what you are going to do, in which case throwing a lot of money into that data center may not be the right way to go."

Things to consider should include determining what is limiting the data center's performance and growth rates and how much longer the facility can handle the enterprise's networking and computing requirements, Simpson says. P

**Most Practical Tip:**

### Study The Maintenance Contracts

A piece of equipment, such as a 5-year-old router or 3-year-old server, may be the perfect candidate for a refresh. However, it is always a good idea to look at the maintenance contract before beginning the project. "If you don't have it on a maintenance contract, how disruptive would it be if that piece of equipment dies and it takes three weeks to get a replacement piece put in?" says Nik Simpson, a senior analyst at Burton Group. "Equipment may be functioning, but it can also be an accident waiting to happen, because if it is [too old], then there is no way you can get spares for it if it does die."

**Best Tip:**

### Make The Business Case

Regardless of technology, equipment recycle schedules, or whatever the reason is behind a refresh, it is necessary to ask yourself whether an equipment refresh will help to fulfill a business need. "The system refresh, both the timing and selection, should be subordinated to the key business goals it most impacts to ensure the greatest return on investment and the least adverse impact on the business," says Rob Enderle, principal analyst for the Enderle Group. "Often a better return can be had by finding ways to better apply the technology already purchased and to better understand the needs of the business than to buy new stuff and tie up the organization on integration/implementation."

## BONUS TIPS

■ **Keep spares handy.** Equipment refreshes should also involve making sure that there are spares available, especially for mission-critical equipment. "You should always have a second part, whatever it is," says John Matzek, CEO of Logic IT Consulting (www.logicitc.com).

■ **Don't forget Murphy's Law.** Even the most thought-out refresh plans can be fraught with peril, so never forget Murphy's Law. "Prepare for the unexpected events," says Brad Kowal, an IT manager for Shands HealthCare in Florida. "You might have dotted the I's and crossed the T's of a new networking card, but there could be a bug that requires a firmware upgrade."

News

## Analysts Predict Explosion In Cloud Use

Continued growth in the cloud computing market is certainly no surprise to anyone who follows the industry, but an anticipated jump of more than 16% this year may come as a bit of a shock. Yet, that's exactly the level of growth that Gartner analyst Ben Pring is predicting.

Pring, a research vice president for Gartner's IT Services and Sourcing group, believes that a combination of factors is fueling the growth and that current economic conditions are a prime mover. "I think what really kind of exploded it, certainly in the last 18 months, is simply the macroeconomic factors, the financial meltdown," he says. "With the reality that big and midsized companies had to put a squeeze on their spending, there was more interest in and attention toward solutions that—theoretically, at least—could be delivered more cheaply."

Even as the worsening economy forced companies to tighten their belts, the technologies on which cloud computing depends have been maturing and becoming more accessible and affordable. "The Internet is the delivery mechanism, and it's been gathering strength and momentum; there's a whole new generation of programming technologies, languages, and methodologies to leverage the Internet," Pring explains. "It's the combination of that supply-side maturation and the demand side being locked down because of the financial turmoil that really created the perfect storm, and that's why we've seen this huge explosion of interest."

### Prepare For Clouds

So, if we can expect a jump in cloud computing, what should IT and data center managers be doing to get ready? Pring thinks that IT personnel should already be in the trenches, testing and experimenting with cloud technologies so that they're prepared for the move: "We can all talk about the theory, and we can all speculate on the pluses and minuses of these types of solutions, but the reality is that when you get your hands dirty, you're going to be in a better position to make a good decision about whether these solutions make sense to you or whether they're not going to fit your requirements."

Smart developers are already experimenting: Much of the current workload on Amazon Web Services is due to people doing development testing—they're playing with the tools, seeing how everything works, learning how to code for a cloud-based infrastructure, and seeing whether that approach makes sense for their companies.

That sort of testing costs money, of course, and companies may be tempted to decide against making what they see as a speculative investment. Analysts such as Pring believe that companies can't afford not to make the investment.

*by Rod Scher*

DATA CENTER MANAGEMENT

# Social Collaboration For The Enterprise

## Web 2.0 Sites Necessitate Updates To Employee Usage Strategies & Governance Policies

*by Kurt Marko*

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**MOST ORGANIZATIONS** have IT AUPs (acceptable use policies) for commonplace services such as email, Web browsing, and PC security. However, many of those policies are ill-equipped for the Web 2.0 world of social networks, peer-to-peer file sharing, and freewheeling collaboration in blogs and wikis—activities employees are ingraining into their daily routine. Many AUPs date from the last century, which equals several generations in Internet time, so trying to control, tame, or even guide today's online behavior with such relics is like trying to apply horsemanship rules for the trails of the Wild West to freeway traffic in LA.

The knee-jerk, and quite understandable, reaction of most IT security pros to any new network application is caution, if not outright suspicion, and "just say no" was a common response as Web 2.0 services started invading the enterprise. Lately, Chris King, director of product marketing for Palo Alto Networks (www.paloaltonetworks.com), says attitudes have changed dramatically. "Smart security people aren't trying to stand up to this [social software use in the enterprise]," he says. Yet despite this perhaps begrudging acceptance, a recent Cisco survey of IT security decision makers found that half consider social networks one of their biggest risks, with a third putting online collaboration applications in the same boat.

### Basic Elements

As companies recognize the strategic necessity of incorporating online social networks and collaborative applications into both their internal communications and external customer relations—a phenomenon MIT's Andrew McAfee christens Enterprise 2.0—they are necessarily faced with developing usage strategies and updating governance polices. Although IT is central to the deployment of these applications, because they are social, the policies must address a gamut of nontechnical issues, meaning policy development and enforcement must span organizational boundaries, from IT to HR to legal and even to marketing.

The overarching policy question executives must address is the degree of freedom vs. the control the organization has toward employee use of social software. In expressing a policy, Forrester analyst Nigel Fenwick structures his recommendations into two sections: one laying the background, purpose, guiding principles, and noncompliance ramifications behind the policy and another outlining the core policy elements. He says an effective document must clearly identify the relevant, covered activities; provide unambiguous employee usage guidelines; define definite boundaries for acceptable usage and behavior; specify ownership of social media content and contacts (meaning the intellectual property contributed by employees); and eventually be incorporated into existing HR standards, employee handbooks, and contracts.

Fenwick says other policy elements should address employees' online behavior, allowable content, online security, and risk mitigation practices. He advises including guidelines on how employees present themselves and maintain professionalism. The policy should also stress the importance of accuracy, credibility, and transparency in online comments while also addressing handling of confidential information, intellectual property, and any legal or regulatory restrictions on online activities.

In her latest book, "Open Leadership," social media consultant Charlene Li writes, "Emphasize places where confidentiality might slip, e.g. product features, client examples, intellectual property, personnel issues. List out what is OK to share and what isn't." Fenwick also advises including policies for handling online blunders, while Li suggests including rules covering policy oversight, enforcement, consequences of violation, and infraction resolution.

A company's own use of Enterprise 2.0 social software requires another set of strategies and policies to address the exploitation of these new communication channels. Info-Tech Research lead analyst Tim Hickernell says there should be a clear separation of employee use of external, public social networks for personal purposes from official uses by employees for company purposes. He advises building a wall between personal and corporate personas, using distinct user accounts and identities for each.

### Policy Enforcement & Training

Policy enforcement mechanisms vary widely depending upon an organization's workforce culture, regulatory environment, and overall openness to social software. King notes the technical difficulty of monitoring Web 2.0 network activity and detecting violations because network control points are scattered among traditional firewalls, Web proxies/security gateways, content filters, and data loss prevention solutions. This situation can quickly lead to a hodgepodge of isolated security policies that often overlap in function while also leaving security gaps and is one reason he says customers are interested in next-generation, application-aware firewalls.

Fenwick cautions that one risk of overly aggressive monitoring is that it creates the perception of IT as the big brother social police. He and Hickernell agree that policy enforcement ultimately isn't IT's responsibility, but rests with supervisors, business managers, and HR. Fenwick contends social networks don't really pose unprecedented challenges to employee productivity, noting that if underperformers couldn't access Facebook, they would likely find other time-wasting, unproductive avenues.

Fenwick notes, "Any policy, no matter how well-crafted, is worthless unless people read, understand, and can apply it easily to their daily activity." He advises publicizing new policies through established internal communication channels, integrating them into existing HR documentation, providing training on social media use, and regularly reassessing the policy's effectiveness.

### Establish Official Personas

Employee use of collaborative Web 2.0 sites and social networks is inevitable and virtually unstoppable. Experts note that even if an organization attempted a draconian "block everything" policy, locking down corporate networks against all social sites, employees would simply switch platforms and use their smartphones to bypass any IT restrictions.

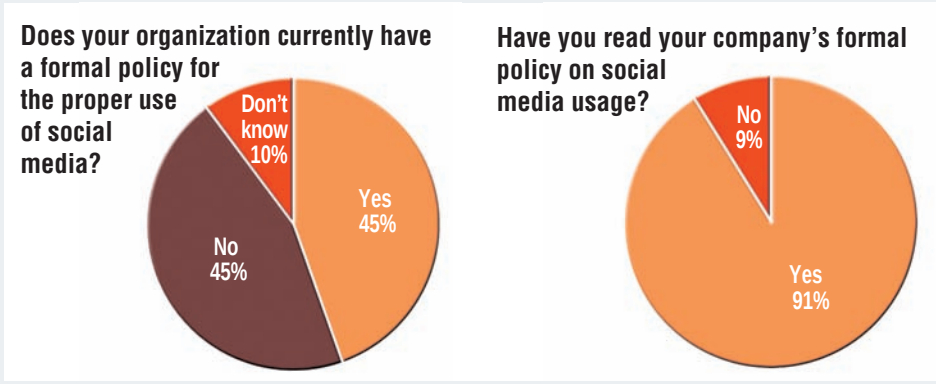
According to McAfee, these sites are not only part of employees' lives, but corporate use of social Web 2.0 sites is also becoming a strategic business imperative. Hickernell agrees, saying companies should establish official personas on the major social sites to augment their Web presence. "Public-facing social networking pages and groups are the new domain names of the Internet," he says. P

### Key Points

- The changing online landscape, epitomized by Web 2.0 collaboration sites such as blogs, microblogs, wikis, and online social networks, necessitates updating existing enterprise acceptable use policies. These should address employee use of company equipment and company time and rules for acceptable behavior and content, particularly when employees are formally identified with the company.
- Companies should also establish official presences on the major public social networks and consider having company-sponsored blogs for employees to discuss work-related topics. Employees speaking on behalf of the company should do so under separate accounts, not using their personal online identity.
- Policy enforcement is primarily a management and HR responsibility; however, IT should be involved in training programs to instill best practices for working professionally, securely, and safely on social sites.

## Enterprise Social Networking Policy Adoption

Many organizations lack a formal social media policy or do not do a good enough job of making employees aware of it. However, when aware of a social media policy, most employees using social media will read it.




SOURCE:"SOCIAL MEDIA USE AND PERCEPTIONS"; FORRESTER RESEARCH SLIDEDECK FROM JANUARY 2010 GLOBAL SOCIAL MEDIA ONLINE SURVEY; BY NIGEL FENWICK; MAY 21, 2010.

# Is It Time To Consider A Service-Oriented Architecture?

## It's Not About Technology

*by Bridget Mintz Testa*

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**ANY BUSINESS BIG ENOUGH** to use more than a couple programs has experienced duplication of effort or what might be called info-envy. It's the realization, for example, that the sales team's great and detailed spreadsheet of customer data would be really helpful to the customer service department, except that customer service's standalone app can't import the spreadsheet data. Making that import possible would take at least six months of in-house effort, which isn't going to happen because the IT department is too busy with maintenance and tending to problems.

SOA is today's solution to that universal problem. Done well, it can revolutionize an enterprise; done poorly, it's a costly and demoralizing failure. A successful implementation of SOA starts with an understanding of what it is and isn't.

### Defining SOA

"Service-oriented architecture is a design paradigm similar to object orientation," says Anne Thomas Manes, vice president and distinguished analyst with Gartner. "It's a set of principles a designer keeps in mind."

SOA's primary goals are increasing IT agility and reducing its costs. "Bad software architecture is the reason we can't respond quickly [to change] and the reason why it costs so much," Manes says. "Every new application requires connecting to other applications. Integration is the bane of IT shops. It's hard, it's brittle, things break."

Among the handful of essential design principles for SOA are loose coupling and separation of concerns. These two together mean that an application must be capable of modifications without a cascade of changes in other applications. They also mean making "interdependencies well-documented and explicit," Manes says. "Loose coupling is what differentiates SOA from object-oriented architecture."

SOA can also be viewed as a collection of services that communicate with each other via standards such as HTTP and XML. "A service is a function that is well-defined and self-contained and doesn't depend on another service," says Doug Barry, principal at consulting firm Barry & Associates. "SOA is a way of connecting them together in a standard way rather than having standalone or ad hoc connections."

For some time, SOA was associated exclusively with Web services, but the architecture can encompass much more, such as email, maps, or customer information. "Any business function can be a service," Barry says.

Another principle of SOA is modularity. "It gives you the ability to reuse assets more quickly," says Hub Vandervoort, CTO of SOA infrastructure products at Progress Software. "You don't need new capability every time you build something new."

Vandervoort cites an example of a Progress Software customer that had five lines of business in property and casualty insurance. "Each line of business had a postal code mapping service, and they were creating and maintaining different code for it," he says. When the customer applied SOA, the different postal mapping services were reduced to one that the lines of business could access independently. Replacing five sets of code with one code module reduced maintenance costs significantly. "[The postal mapping service] can also be reused when a sixth line of business comes along," Vandervoort explains.

### Cultural Change Ahead

For a number of years, the SOA was seen as a technology problem. "Vendors walked in with products they said would lead to SOA," Manes says. "Many people thought that all they needed to do was to use these technologies."

Unfortunately, these attempts didn't include applying the principles of SOA. Companies "got the same thing they'd had 10 years ago," Manes explains. Software concerns weren't separated, nor were the architectures and applications explicitly interoperable, modular, or loosely coupled. The results were very expensive failures.

"People have finally realized that SOA isn't about technology," Manes says. "It's about architecture and how you design your applications."

### Key Points

- Service-oriented architecture is a software design philosophy based on loosely coupled applications with clearly documented interdependencies that utilize modular and reusable sets of services. Connections between services and software are determined by standards such as HTTP and XML.
- Implementing SOA is not a technological effort. It is an exercise in cultural and institutional change and is more about change management than IT.
- SMEs can expect to reap substantial business benefits, especially agility and reduced IT costs, from a successful SOA implementation.

As any IT professional knows, however, users get extremely attached to applications working just so. They don't like change. And implementing SOA isn't about changing one app—it's about changing your entire business software architecture. Even though the goal is greater business agility and reduced costs for the enterprise as a whole, most users don't care about those things. They care about their work and don't think a lot about its strategic role in the business. That is, however, just the kind of thinking that has to occur for SOA to succeed.

"SOA requires a lot of integration and maybe replacing existing systems as needed," Barry says. "It's not plug-and-play. You must do a lot of design, and design issues are seriously hampered by people issues."

When planning for SOA, Manes says, "You must do an overall enterprise business analysis—a whole enterprise perspective of all the business applications. Without that, you don't get the big benefits."

But Manes cautions that you need to be realistic. "You're asking people to change behavior," Manes explains. "You need rules to make that happen. The adoption of SOA is cultural, and in almost every real success story, it's been with a new CIO. It changes the way you do business. It's affecting a total business transformation."

### SOA Benefits For SMEs

When it works, an SOA implementation can make a business far more responsive to both customers and competitors at less cost than previous operations. "You can do things faster, cheaper, better," Barry says. "If you're a large enough organization, you can unburden your IT people from doing routine activities so they can do creative ones."

With SMEs making increasing use of cloud applications, it can be very tough to integrate those programs into the rest of a company's software architecture. "SOA's relevance to SMEs is how it relates to the cloud," Vandervoort says. "If you use different cloud services, you can link those together through SOA. As SMEs consume more and more cloud services, they must think about integrating them, and SOA is the logical choice." P

### SOA Evolution

SOA has changed a lot since it was introduced about a decade ago, and there's no sign its evolution is slowing down. Doug Barry, principal of enterprise software at Barry & Associates, says SOA may soon incorporate "semantic awareness," or the comprehension of the meanings of words. "This takes advantage of XML vocabularies," Barry says.

The speed of business is forcing another change. "SOA is grappling with the reality of same-day service," says Hub Vandervoort, CTO of SOA infrastructure products at Progress Software. "It used to take several days to do anything, but the velocity of business is increasing so that every business must have same-day service. SOA is becoming more event-driven."

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- Wallmount and server racks and cabinets, including sound proof, air conditioned, and large cable bundle
- Desktop/tabletop portable racks
- Shockmount shipping cases
- Bulk cable

(866) 207-6631 I www.rackmountsolutions.net

## Physical Infrastructure

Server Technology Solutions for the Data Center Equipment Cabinet

Server Technology is committed to the PDU market with the largest group of engineers dedicated to power distribution and other solutions within the equipment cabinet. Advancements in device power monitoring help data centers monitor and improve their efficiency, and continuous research and development is fueled by companies that look to Server Technology for their custom cabinet power solutions.

### Products Sold:

A complete line of cabinet PDUs, including Per Outlet Power Sensing (POPS), Rack Mount Fail-Safe Transfer Switch, Console Port access with remote power management, Switched, Smart, Metered, Basic, and -48 VDC

(800) 835-1515 I www.servertech.com

## Physical Infrastructure

SIMPLEX™ ISOLATION SYSTEMS

Since 1979, Simplex Isolation Systems has been setting new design standards in modular expandable cleanroom components, isolation curtains, hardware, and new product development. Fontana, Calif.,-based Simplex's unique strip doors and mounting systems are designed for quick installation. Simplex parts and materials perform with optimum efficiency, last longer, and save you money. And with Simplex, you are always backed by industry expertise, product knowledge, and the best warranties in the market.

### Products Sold:

- Cleanrooms
- Enclosures
- Strip doors
- Curtains

(877) 746-7540 I www.simplexisolationsystems.com

## Physical Infrastructure

Upsite Technologies was founded in 2001 to address data center needs for products and solutions reaching far beyond standard engineering and consulting offerings. The company innovates elegantly engineered products specifically designed to maximize data center airflow efficiency, improve PUE, and increase heat density. Upsite designs and manufactures the LOK family of products, which provides superior sealing, maximum energy savings, and the best protection available for your IT equipment.

### Products Sold:

- KoldLok Grommets
- HotLok Temperature Strips
- HotLok Blanking Panels

(505) 982-7800 I www.upsite.com

## Networking & VPN

ASD's mission is to be the best nationwide provider of design, deployment, and project management services in the voice and data network integration industry. We offer turnkey, reliable, and cost-effective communications systems tailored to fit the client. Our goal is to be the single point of contact for services to end users, systems integrators, manufacturers, building owners, and others. Our commitment includes delivering projects on time and on budget and offering superior, customized design.

### Products Sold:

Voice and data network integration services, along with a line of networking-related products.

(800) CABLING (222-5464) I www.icat-its.com

## Storage

With more than a decade of experience creating reliable, innovative software, StorageCraft Technology has a primary objective of helping businesses reduce downtime, gain increased stabilization, and lower the total cost of ownership of their systems via disaster recovery, backup, migration, and data security software. Based in Draper, Utah, the company aims to provide the most encompassing data protection and quickest recovery possible.

### Products Sold:

Backup, disaster recovery, migration, and data protection software for Windows systems; desktop, server, enterprise, and small-business versions available

(801) 545-4700 I www.storagecraft.com

## Security

Using patent-pending application-identification technologies, Palo Alto Networks reinvented the network firewall to provide companies unequaled visibility and control over the applications and related data coming into and out of company networks. Without negatively impacting performance, Sunnyvale, Calif.,-based Palo Alto Networks' firewalls can identify and categorize over 950 applications and enforce access policies on a per-user or per-group basis. These firewalls also have integrated IPS and provide content scanning to defend against modern threats to the enterprise.

### Products Sold:

PA-4000 series, PA-2000 series, and PA-500 next-generation firewalls, with throughput up to 10Gbps.

(866) 320-4788 | www.paloaltonetworks.com

## Servers

NIXSYS is a Santa Ana, Calif.,-based provider of 100%-guaranteed rackmount Intel- and AMD-based servers and workstations, value and short-depth rackmount servers, workstations and servers containing ISA slots, and workstations and servers running on legacy OSes. NIXSYS also offers an assortment of managed services for IT; various security tools; and technology, design, and budget consulting.

### Products Sold:

- Custom-built workstations and servers, including models with ISA slots and legacy OSes
- Value and short-depth rackmount servers
- Support, network, and technology consulting

(866) 464-9797 I www.nixsys.com

## Servers

When buying a server, you don't want a one-size-fits-all solution. Super Micro uses modular and interoperable Server Building Blocks to offer the highest levels of flexibility and customization possible to design servers tailored and optimized for your specific needs. Super Micro's focus on green computing leadership, system design expertise, and power-saving technologies ensures the products you purchase are energy-efficient and application-optimized.

### Products Sold:

- Servers
- Networking
- Motherboards
- Storage
- Chassis

(408) 503-8000 I www.supermicro.com

## Clients

Maryland-based dtSearch started research and development in text retrieval in 1988. The company is known for speedy adoption of new programming standards, OSes, and file types. Plus, it has a flexible licensing model. Typical corporate use of dtSearch includes general information retrieval, Internet and intranet site searching, and email archiving and email filtering.

### Products Sold:

Text retrieval products, including:

- Desktop With Spider
- Web With Spider
- Network With Spider
- Engine For Win & .NET
- Publish For CD/DVDs
- Engine For Linux

(800) 483-4637 I www.dtsearch.com

## Equipment Dealer

At Information Technology Trading, our goal is to help you acquire the right hardware or software solution. We specialize in purchasing and reselling data-processing equipment and have more than 21 years combined experience. We provide services and system upgrades, DASD, communication, and memory. We're also an outlet for off-lease portfolios.

### Products Sold:

- AS400, Advanced System/36, R/S6000, ES/9000, and PC systems (including lease and rental)
- CPUs, memory, disks, tapes, displays, and controllers
- Services, including system design and installation, maintenance, and buyback of existing hardware

(877) 715-3686 I www.itechtrading.com

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### Products Sold:

We buy used cell phones & PDAs, including Apple, LG, Blackberry, HTC, Motorola, Nextel, Nokia, PalmOne & Samsung.

(800) 248-5360 I www.pacebutler.com

## Equipment Dealer

In 1987, Pegasus Computer Marketing started providing mainframe products to the end-user market. What began as a sales-only organization soon adapted to offer in-house repair and refurbishment. During the past 10 years, Pegasus has focused primarily on the point-of-sale and barcode industries, buying, selling, and providing service contracts for anywhere from a few scanners to hundreds.

### Products Sold:

We buy, sell, and service:

- Point-Of-Sale Equipment and POS/PC Flat Panels
- Wired and Wireless Barcode Hardware
- Kronos Time Clocks and Accessories

(800) 856-2111 I www.pegasuscomputer.net

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